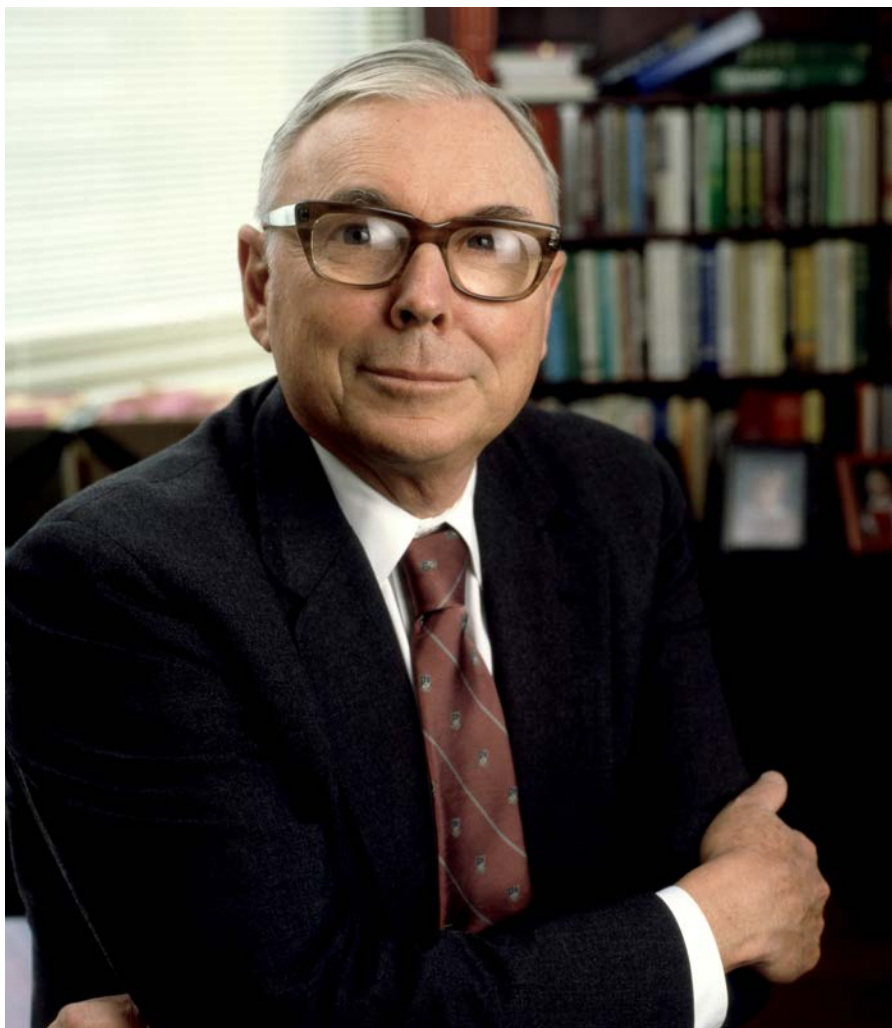


FINANCIAL HISTORY

THE MAGAZINE OF THE MUSEUM OF AMERICAN FINANCE



Tribute to the Life and Career of Charlie Munger: 1924–2023

The Unexpected Legacy of a Prudent Man

The Birth of the Fixed Income Analyst

ISSUE 148 | WINTER 2024



2024 GALA

Thursday, March 7, 2024

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FINANCIAL HISTORY

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Portrait of Charlie Munger, vice chairman of Berkshire Hathaway, taken in 1988. See related article, page 12.



Bonnie Schiffman Photography

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Museum Welcomes New Trustees and Prepares to Honor Financial Luminaries at 2024 Gala

AS 2024 BEGINS, I am very happy to announce that we are preparing to host our annual Gala at a new venue in midtown Manhattan. On the evening of March 7, we will celebrate the Museum's recent accomplishments and honor four financial icons at the Ziegfeld Ballroom.



Message to Members

David J. Cowen | President and CEO

We have an exciting speaking line-up for the program, which will be emceed by CNBC Senior Markets Correspondent Bob Pisani and "WealthTrack" Executive Producer and Managing Editor Consuelo Mack. Richard Clarida—PIMCO's global economic advisor and former vice chairman of the Board of Governors of the US Federal Reserve System—will receive the Whitehead Award for Distinguished Public Service and Financial Leadership. Dr. Clarida has demonstrated the highest order of achievement through impactful

government service and insightful economic leadership.

We will also honor Charles M. Royce—founder, chairman and portfolio manager of Royce Investment Partners—with our Financial Innovation Award. Mr. Royce is a pioneer in small-cap stocks and a leader in small-cap value investing. This award recognizes individuals who have transformed the financial services industry and demonstrated outstanding achievement in advancing entrepreneurship and free enterprise.

Our 2024 Lifetime Achievement Award will honor Howard Marks, co-chairman of Oaktree Capital Management. Mr. Marks is a pioneer and visionary leveraged finance investor whose writings are legendary and widely acclaimed by the investment world.

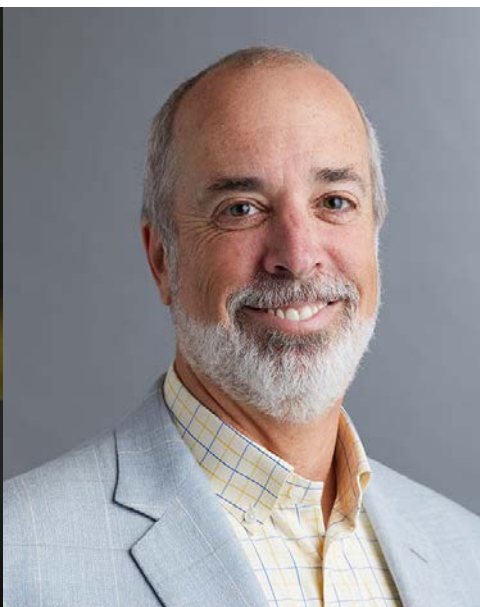
And we will pay tribute to Tina Byles Williams—the chief executive officer, chief investment officer and founder of Xponance—with a Special Recognition honor for her trailblazing work in bringing a focus on diversity to the investment

management arena. She is also a driving force in providing financial education to inner city youth.

Proceeds from our 2024 Gala will help support all aspects of our mission to promote financial education by preserving, exhibiting and teaching about American finance and financial history.

I am also excited to announce that we welcomed three new trustees in the past year. Douglas Cifu, the CEO and co-founder of Virtu Financial, joined our Board in May. Kirk Haldeman, a managing director and the global head of Morgan Private Ventures at J.P. Morgan Chase & Co., was elected to our Board in November, along with nationally acclaimed financial advisor and #1 *New York Times* best-selling author Ric Edelman, who officially joined our Board in January.

I look forward to continuing to work with our Board to ensure the continued growth and success of the Museum. I also hope to see many of our friends and supporters on March 7, as we celebrate the past year of achievements and look forward to reaching new audiences in the year ahead. 💰



The Museum welcomed the following new trustees to its Board in the past year (left to right): Douglas Cifu, Ric Edelman and Kirk Haldeman.

Five High School Students Awarded MFA Scholarships

THE MUSEUM OF AMERICAN FINANCE is proud to announce that five outstanding students have received the Museum Finance Academy (MFA) merit scholarships for the Fall 2023 semester. The MFA is a free five session personal finance certificate course for 11th and 12th graders with the goal of teaching students to aspire to financial independence through developing an appreciation for savings, establishing financial goals and learning to avoid scams.

Krish Bhandari, a 16-year-old junior at Stuyvesant High School in New York, received the top scholarship award of

\$1,000. He enjoys solving math competition problems, playing chess and lifting weights. His dream is to become an entrepreneur.

The other four top achievers in the MFA program received scholarships of \$500 each. They include James Henry Cornell, a 17-year-old senior at the Hudson School in New Jersey, who is drawn to finance as a future career because he enjoys the quantitative and logical aspects of working with numbers and real-world currency; Amin Ibrahim, a 16-year-old junior at James Madison High School in Brooklyn, who enjoys engineering and

computer programming; Luna Vilarino, a 16-year-old junior at Beacon High School in Manhattan, who co-founded a banned book club and spends much of her time volunteering; and Yuting Zou, a 16-year-old junior at James Madison High School in Brooklyn, who hopes to attend Baruch College in the future and plans to major in business or finance.

The Museum is extremely proud of all the students who successfully completed the Fall 2023 MFA and earned their certificates in personal finance. Many thanks to Con Edison for their continued sponsorship of the fall semester of this program. 💰



The Museum is proud to announce that (left to right, top to bottom) Krish Bhandari, James Henry Cornell, Amin Ibrahim, Luna Vilarino and Yuting Zou have earned merit scholarships as top achievers in the Fall 2023 semester of the Museum Finance Academy.

MoAF Adds Noble Manuscripts to Collection

By Sarah Poole, Collections Manager

THE MOST RECENT ADDITION to the Museum's permanent collection is a group of four illuminated manuscripts donated by MoAF founder John Herzog. These beautifully illustrated documents were presented to Henry George Stebbins Noble, president of the New York Stock Exchange (NYSE) from 1914–1919, to commemorate his leadership at the outbreak of World War I.

Noble was born on March 9, 1859 in New York City. His grandfather, former US Representative Henry George Stebbins, was a stockbroker who served three terms as president of the NYSE in 1851, 1858 and 1863. Noble joined his grandfather's firm after graduating college in 1880 and purchased his grandfather's seat on the exchange in 1882. He was elected governor of the NYSE in 1897 and began his first term as president in May 1914. Two months later, the world was at war.

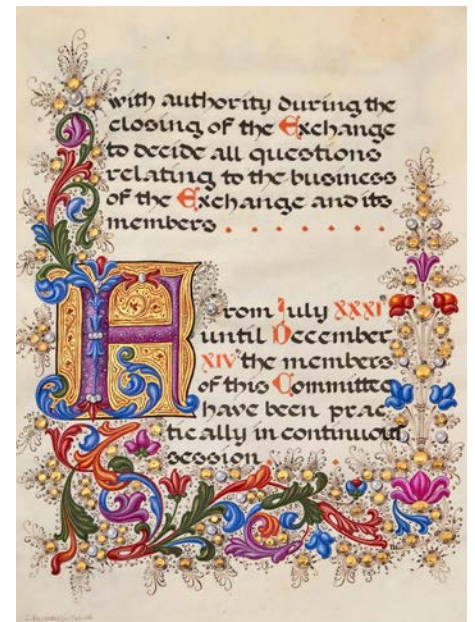
On July 31, the exchange closed and would not fully reopen until December. This remains the longest shutdown in NYSE history. The purpose of the shutdown was to prevent a massive sell-off of European-owned American securities in order to fund the war. In Noble's own words, "There was to be an unexpected run on Uncle Sam's Bank and the Stock Exchange was the paying teller's window through which the money was to be drawn out, so the window was closed to gain time." On November 28, the exchange reopened in a limited capacity for bond trading, and stock trading resumed on December 12, 1914.

The illuminated manuscripts that are now a part of the Museum's collection emphasize the significance of Noble's leadership during the shutdown crisis:

At the close of a year's most successful and admirable administration by Mr. Henry G.S. Noble as President of

the New York Stock Exchange, under the most alarming and exacting conditions, with business transactions suspended for five months, with the whole world in chaos and disorder, and a quiet and orderly settlement of our affairs effected through the firm and masterly grasp of the situation, be it Resolved that the Governing Committee place upon the records its unbounded confidence in its admiration and affection for Mr. Noble.

Noble saw the NYSE through the entire war, serving as president through May 1919. Few individuals boast as storied a career at the exchange as Noble. He held his seat for a total of 56 years and served as a governor for 37 of those years. He retired in 1938 and continued his family's legacy by passing down his seat to his grandson. When Noble died on February 6, 1946, that seat had remained in his family for 115 years. \$



TRIVIA QUIZ

HOW MUCH DO YOU KNOW ABOUT FINANCIAL HISTORY?

1. Who was America's first female CEO?
2. What US president—the grandson of a wealthy western entrepreneur—was born with the name Leslie Lynch King, Jr.?
3. What entrepreneurial engineer disappeared without a trace on the evening of September 29, 1913?
4. What 19th century merchant's last will and testament led to the creation of the Prudent Man Rule (today, the Prudent Investor Rule)?
5. What executive did Warren Buffett nickname the "abominable no-man"?
6. What country uses the US Sacagawea dollar coin as a primary currency of exchange?
7. What MIT-educated technologist, banker and attorney did J.P. Morgan recommend to run the project to harness electrical power from Niagara Falls?
8. What precursor to the Federal Reserve, through its ability to issue and limit the circulation of treasury "notes," functioned as a central bank?
9. What British chip designer debuted shares on Nasdaq at a valuation of \$54.5 billion, with share prices rising 25% in the first day of trading, making it the biggest IPO of 2023?
10. What US President signed the Securities Exchange Act on June 6, 1934?



Courtesy of BISSELL Inc.



1. Anna Sutherland Bissell 2. Gerald Ford
3. Rudolf Diesel 4. John McLean 5. Charlie
Munger 6. Ecuador 7. Edward Dean
Adams 8. The Independent Treasury (or Sub-
Treasury) 9. Arm 10. Franklin D. Roosevelt



By Brian Grinder and Dan Cooper

CHARLES H. KING was a savvy entrepreneur. A native of Pennsylvania, King moved to Nebraska in 1884. He followed the Fremont, Elkhorn and Missouri Valley¹ railroad as it expanded from Fremont, Nebraska in the eastern part of the state westward into Wyoming and set up various businesses along the tracks in soon-to-be railroad communities. King co-founded a number of towns in this manner, including Douglas, Wyoming; Casper, Wyoming; and Chadron, Nebraska. It was in Chadron that King's son, Leslie Lynch King, was born in 1886. King's string of stores, lumberyards, warehouses and banks soon made him a multimillionaire. He was one of the wealthiest people in Nebraska and Wyoming.

King moved from Wyoming to Omaha, Nebraska in 1905, where he started the Omaha Wool and Storage Company in 1908. Omaha, an important railroad hub, was an ideal location for a wool market because it allowed the sheep ranchers of the West to get their wool to market sooner and at a better price than could be obtained from far away East Coast wool markets. With a 40-million-pound capacity, the wool market's warehouse promised to add significantly to King's fortune. King purchased a 15-room mansion in Omaha and settled comfortably into the role of wool merchant.

The Personal Finances of Presidents, Part 6: Gerald R. Ford

King's son Leslie was given a stake in the new venture and became the general manager of the wool company. Leslie's handsome annual income of \$6,000, combined with his good looks, made him a most eligible bachelor. When his sister, Marrietta, introduced him to Dorothy Gardner, a college classmate, Leslie was instantly stricken and the two were married in September 1912 in Dorothy's hometown of Harvard, Illinois.

What Dorothy didn't realize was that Leslie was a spoiled rich kid with a violent temper. He was also a horrible money manager who was deeply in debt.² Her short-lived marriage was filled with angry outbursts, jealous rage and physical abuse. Dorothy soon escaped to her parents' home for a time, but she returned to Omaha in the fall of 1912. In December, she fled to her sister's house in the Chicago area but returned to Omaha later that month. In the summer of 1913, the couple moved into his parents' mansion on Woolworth Avenue because Leslie couldn't afford to pay the rent on their apartment. Leslie Lynch King, Jr., the future president of the United States, was

born there on July 14. Sixteen days later, after Leslie, Sr. threatened mother and child with a knife, Dorothy and the baby left Omaha for good.

A bitter Leslie, Sr. filed for divorce, claiming that his wife had abandoned him, but Dorothy fought back, convincing the court that she was the victim of an abusive marriage. She was awarded \$3,107 in alimony, \$300 for attorney fees, child support of \$25 a month and sole custody of Leslie, Jr.

Leslie, Sr. fled back to Wyoming to avoid making the court ordered payments to Dorothy.³ In his stead, Charles King made the \$25 child support payment every month until his death in 1930. Leslie, Sr. started over in Wyoming, where he remarried and began a second family. Through his King Investment Company, he purchased land around Riverton, Wyoming and engaged in ranching.⁴ Although King prospered in Wyoming, he still refused to take responsibility for any of the court ordered payments, citing the needs of his growing family.⁵

Meanwhile, Dorothy eventually moved to Grand Rapids, Michigan to care for her



Charles King, the grandfather of Leslie Lynch King, Jr., drives the first stake for the Omaha Wool Market, May 1908.



Childhood photograph of Gerald R. Ford, Jr. (then Leslie Lynch King, Jr.), 1916.



Photograph of 3202 Woolworth Avenue in Omaha, Nebraska, birthplace of Gerald R. Ford, Jr.

aging parents. In Grand Rapids, she met Gerald R. Ford, a young paint salesman, at a church social. The two were married in 1916. Ford raised Dorothy's child as his own and was by all accounts a model father. He even gave him his name, Gerald R. Ford, Jr. The Fords were a working-class family who suffered several financial setbacks. During the post-WWI recession, Ford, Sr. lost his job and the family home. He started the Ford Varnish and Paint Company in 1929 just before the stock market crashed. Although the business survived, the Great Depression put a severe crimp in the Ford family's finances.

Young Gerald Ford, Jr., the grandson of a wealthy western entrepreneur, endured his family's financial problems and grew up valuing hard work. As a teenager, Ford worked the lunch hour at Bill Skougis's Dairy Shoppe across from his high school. He first met his biological father at Bill's when King unexpectedly walked through the door and told Ford, "I'm Leslie King, your father." King, his wife and daughter were driving back to Wyoming from

Detroit in their newly purchased Lincoln automobile.⁶ King took Ford out to lunch, where they engaged in superficial conversation. At the end of the meal, King gave Ford \$25 and told him to buy something he "couldn't afford otherwise." Although Ford had known since he was 12 years old that Gerald Ford, Sr. was not his biological father, he did not know anything about Leslie King, and the incident at Bill's disturbed him. He would not see his biological father again for several years.

After high school, Ford attended the University of Michigan, where he played center for the Wolverine football team. Full-ride football scholarships and lucrative NIL contracts did not exist in the 1930s. Instead, Ford worked two part-time jobs and relied on support from friends and family to pay his college expenses. During his senior year, Ford was hired as the house manager and elected treasurer of his fraternity, DKE. The Great Depression and the irresponsibility of past fraternity leaders had left DKE properties in disrepair and the fraternity's finances in shambles. To his

great credit, Ford spearheaded repairs to the facilities and returned the fraternity's finances to sound footing.

Ford graduated from the University of Michigan in 1935. The Green Bay Packers and Detroit Lions both offered Ford \$200 per game to play professional football, but Ford had already decided to pursue a law degree at Yale University, where he would also work as an assistant football coach and head boxing coach. At first, the law school would not allow him into the program because of his demanding work schedule. Ford eventually persuaded them to let him try some classes while working, and when he successfully completed those classes, they accepted him into the law school. Ford received his law degree in 1941.

After his first year at Yale, Ford got a job as a summer park ranger at Yellowstone National Park. While he was in Wyoming, Ford visited the King ranch in Riverton, where he met his stepbrothers and sister. According to Ford biographer Richard Norton Smith, "What he saw there—a comfortable home, extensive irrigated ranch

lands and a prominent position with the local bank—reinforced the impression of his birth father as a man of hoarded wealth and dubious character.” Ford reported all of this to his mother, who was already upset that her ex-husband refused to help with their son’s college expenses.

Ford’s revelations about his birth father’s situation in Wyoming prompted Dorothy Ford to sue King for failure to pay child support after Gerald’s grandfather, Charles King, passed away. After an extended court battle, the issue was finally settled when King sent a check for \$4,000 to his former wife. When his mother tried to give the money to Ford, he refused it.

Leslie King, Sr. died in 1941 before Ford began his congressional career. He never saw his son become the only eagle scout, the only national park ranger and the only native Nebraskan to become the only unelected president in United States history.

After his presidency, Ford made a good deal of money. Both he and his wife, Betty, signed book contracts that netted them \$1 million. This child of the Great Depression wanted to make sure that he left his family in a good financial position. According to Smith, “To be able to move into a \$650,000 home in Rancho Mirage and a \$2 million ski chalet near Vail, Colorado—mortgage-free—was for Ford a source of unabashed pride.”

The grandson of a wealthy entrepreneur raised by a loving stepfather, who taught him the satisfaction of working hard, the importance of honesty and the value of a dollar, rose to unimaginable heights. Ford’s biological father’s negligence and lack of attention to his first-born child came with a silver lining. For instead of growing up as a spoiled rich kid’s spoiled son, Gerald Ford, Jr. grew up to be president of the United States. \$

Brian Grinder is a professor at Eastern Washington University and a member of Financial History’s editorial board. Dr. Dan Cooper is the president of Active Learning Technologies.

The authors would like to thank the staff at the Pioneer Museum in Lander, Wyoming for providing a copy of Loren Jost’s excellent article on Charles H. King.



Gerald R. Ford, Jr. with his wife and son, Michael, at the Grand Rapids Airport on October 11, 1951.

Gerald R. Ford Presidential Library and Museum

Notes

1. The Fremont, Elkhorn and Missouri Valley was a subsidiary of the Chicago and North Western Railroad (CNW) and was later consolidated into the CNW. According to Charles King chronicler Loren Jost, King may have spent time in Chicago before moving to Nebraska. During his time in Chicago, he may have met railroad officials who later tipped him off about the westward expansion plans of the Fremont, Elkhorn and Missouri Valley.

2. Jost also argued that “fame through association with a president doesn’t do justice to [Charles King]. His accomplishments make him noteworthy in his own right.” This news bit that ran in the October 19, 1907 edition of the *Riverton Republican*, while written in jest, was closer to the truth than the newspaper may have imagined: “The bunch of sheep purchased one year ago by Mr. Leslie King from L.A. Morrison were sold the past week at a profit of \$2,300.00. Mr. King is at present

visiting relatives in Omaha, doing his best to dispose of his easy money.”

3. When he was president, Gerald Ford likely took great pleasure in signing into law the Child Support Enforcement and Paternity Establishment Program of 1975, which imposed federal penalties on fathers who moved to another state in order to avoid paying child support.
4. According to Jost, “Riverton old-timers remember Leslie Sr. as spending his time driving around town in his Lincoln automobile, looking at the various properties owned by the King family. They also remember that Leslie divided his time between Riverton and Glendale, California, the location where his parents had retired.”
5. Although the Kings enjoyed a prosperous life, they were not exempt from tragedy. Their daughter Sevilla’s death was reported in the October 19, 1921 edition of *The Riverton Review*. The 26-month-old

died after accidentally sitting “in a pail of boiling water that was intended to be used in scalding the feathers from a turkey.” She lived for 16 days before succumbing to her burns. Sevilla was the Kings’ first child together.

6. The new vehicle was evidently purchased with money (\$50,000) King had recently inherited from his father.

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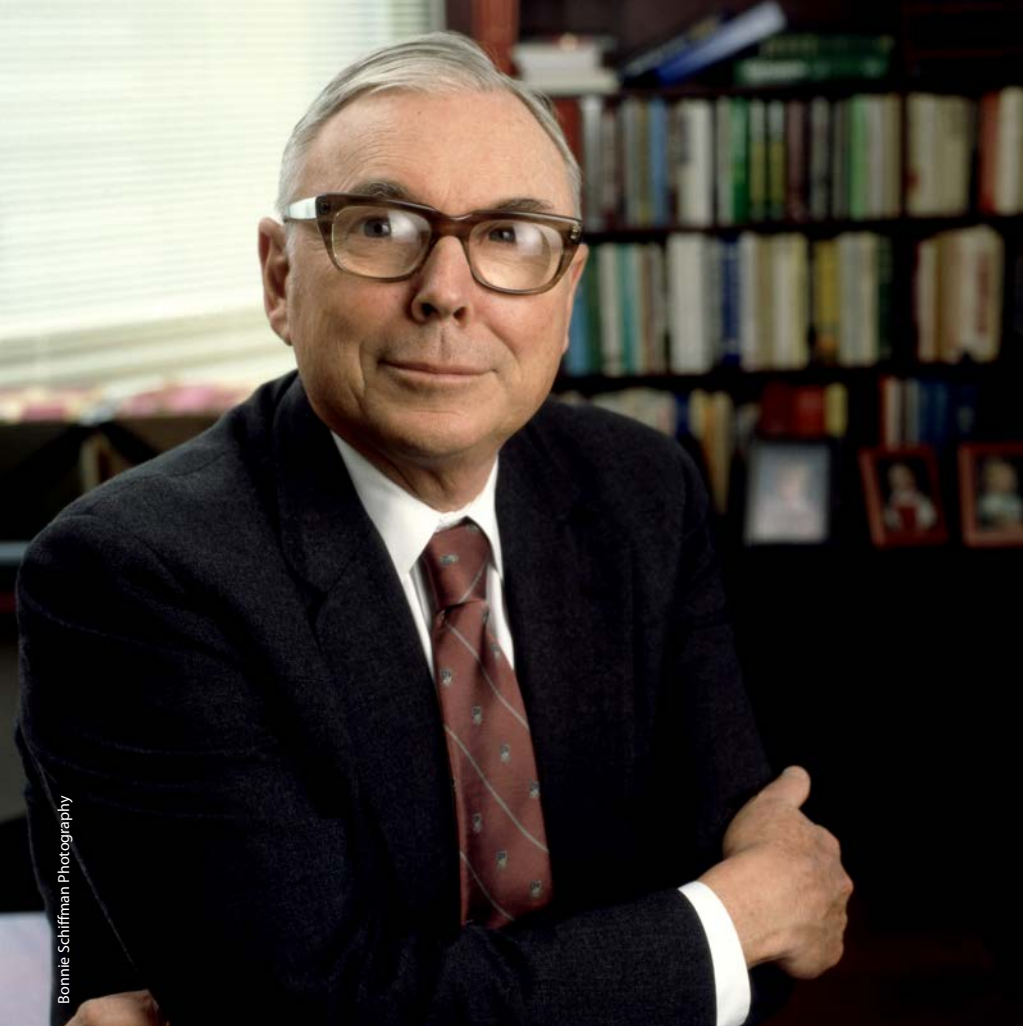
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Charlie Munger

The Life and Legacy of Our Late, Eminent Friend

By Lawrence A. Cunningham

CHARLES T. MUNGER, who died on November 28, 2023, a month shy of his 100th birthday on New Years Day, was an eminent figure in contemporary finance. As Warren Buffett's long-time business partner and vice chairman of Berkshire Hathaway, he helped shape the culture and philosophy of one of the world's most successful and admired companies. He was also a voracious reader and gifted intellectual who drew on a wide range of disciplines and sources to develop a unique approach to investing and decision-making.

A Remarkable Career

Munger was born in Omaha, Nebraska, in 1924, the son of a lawyer and a home-maker and grandson of a federal judge. He attended the University of Michigan as a math major from 1941 to 1942, served as a meteorologist in the US Army Air Corps during World War II while taking classes at Caltech and graduated *magna cum laude* from Harvard Law School in 1948

(in two years rather than three, despite not having a college degree). He practiced law in Los Angeles until 1965, while also pursuing interests in the fields of investing and real estate.

In 1959, Munger met Buffett, a fellow Omaha native, and they soon became close friends and collaborators. In 1962, Munger co-founded both a law firm, Munger Tolles, a leading firm today, and an investment partnership, Wheeler, Munger & Company, which achieved an average annual return of 19.8% through its closure in 1975, beating the Dow Jones Industrial Average by 13.7 percentage points over the period.

In 1977, Munger acquired the Daily Journal Corporation, and led its growth over the decades, remaining on its board until his death. In 1978, he joined Berkshire Hathaway as vice chairman, where he made many contributions and influenced the world of finance for five decades. He was also chairman and president of Wesco Financial from 1984 until 2011, when it became a wholly owned Berkshire subsidiary.

Major Contributions to Berkshire

Munger's most significant contribution to Berkshire was shaping its investment philosophy. Under his influence, Buffett's approach evolved. In his early years, Buffett focused on cheap and undervalued companies as his mentor, Benjamin Graham, had taught him. Munger nudged Buffett toward a broader and more flexible one that considered business quality, as outlined by investor Phil Fisher in his 1958 book, *Common Stocks and Uncommon Profits*, now a classic of investment literature.

Munger recognized that high-quality businesses with durable competitive advantages can generate more value over time, even if not bargain-priced, which is better for the long term than mere "cigar butt" companies. This refinement of investing to focus on both value and quality was demonstrated early in the Buffett-Munger collaboration. In 1971, Munger persuaded Buffett to buy See's Candies, a premium chocolate maker, for a price that was far above its book value and earnings multiple. Munger observed that See's had a loyal

customer base, a strong brand and a high return on capital, which allowed it to raise prices and increase cash flow over time.

The See's acquisition began Berkshire's legendary practice of buying high-quality businesses with durable competitive advantages at reasonable prices, rather than mediocre ones on the cheap. Good examples are marquee Berkshire subsidiaries such as Benjamin Moore, Dairy Queen and Fruit of the Loom, along with a collection of regional furniture marts and jewelry stores. Berkshire used this approach to buy and hold shares in some of the most successful and profitable companies in history, such as American Express, Apple and Coca-Cola. Munger and Buffett have often repeated what is now a talismanic lesson: "A great business at a fair price is superior to a fair business at a great price."

Munger and Buffett maintained a strong and harmonious partnership across six decades. They shared a fundamental philosophy, a passion for learning and a sense of humor, despite occasional disagreements and different temperaments, with Buffett being gregarious and upbeat, Munger dour and cynical.

One example of their humor was the naming of a corporate jet they acquired in the 1980s, which they dubbed the "Indefensible," reflecting their aversion to unnecessary expenses and awareness of the irony of owning a luxury item. They sold the jet in 2000, after buying Net Jets, a fractional aviation company, which they considered a better investment and a more efficient way of traveling.

Munger devised Berkshire's distinctive shareholder charitable giving program in 1981, which during its 20-year run allowed every Berkshire shareholder to choose charities to receive a certain amount of money from Berkshire. This program responded to the company's growing wealth and diverse shareholders. Munger's unique and democratic design reflected Buffett and Munger's belief not only in the importance of the affluent giving back to society, but their conviction that a company's shareholders, not its managers, should decide how corporate philanthropy is directed.

Munger was known for his sparing but decisive veto power over improvident acquisitions at Berkshire. He always said no to Buffett when he thought a deal was too risky, expensive or complex, earning



Warren Buffett and Charlie Munger at the symposium for *The Essays of Warren Buffett*, held at the Cardozo Law School in New York City in October 1996.

Courtesy of Lawrence A. Cunningham

him the nickname "abominable no-man," as Buffett put it while quipping of Munger's role as a "negative feedback system."

Buffett admitted to making mistakes when failing to consult with Munger, such as losing a billion dollars on a \$2 billion investment in the debt of a leveraged buyout of Texas Electric Utilities in 2007. He regretted not seeking Munger's advice, who would have warned of the dangers of excessive leverage and the unpredictability of the energy market.

Munger also taught Buffett to avoid the "institutional imperative": the tendency of managers to follow the crowd and imitate peer behavior, regardless of the merits.

Munger drew on his deep reading in the fields of psychology and human behavior to help Buffett to think independently and rationally, and to resist the pressures of conformity and convention.

Munger extolled Berkshire's decentralized structure, which gives managers the freedom to run their businesses without interference from headquarters, as long as they followed basic principles and reported honestly and promptly. Such autonomy helped make Berkshire the buyer of choice for business sellers wishing to continue operating them. Munger famously put it at the 1998 Berkshire annual meeting: We delegate "to a point



Courtesy of Lawrence A. Cunningham

The Corporate Finance panel at the symposium for *The Essays of Warren Buffett*, October 1996. Left to right: Professor William A. Klein (UCLA), Professor Lynn A. Stout (Cornell), Professor Lawrence A. Cunningham (GW), Charlie Munger, Professor Robert W. Hamilton (Texas) and Professor William W. Bratton (Rutgers).

just short of abdication.” At the 2009 meeting, Munger said Berkshire was built upon “a seamless web of deserved trust,” another turn of phrase well-known to Munger’s followers. He explained the culture and its value:

We have a very extreme version of federalism. We leave people alone. We don’t have big staffs, lots of meetings or reports, budgets, consultants or strategic plans. We just have a lot of trust. And that’s what we want. And if you have that, you have a huge competitive advantage.

A Voracious Reader Seeking “A Latticework of Mental Models”

Munger’s influence on Buffett’s investment philosophy and Berkshire’s culture is recognized by a wide and diverse

audience, including an insightful 2017 book by Tren Griffin, *Charlie Munger: The Complete Investor*. In my 350-page collection of Buffett’s famous shareholder letters, *The Essays of Warren Buffett*, he mentions Munger on average once every third page.

In her delightful 2003 biography of Munger, *Damn Right!*, Janet Lowe captured the essence of the man behind the grumpy exterior, revealing Munger as a modern Benjamin Franklin. Like Franklin, Munger was a polymath who embraced interdisciplinary learning and excelled in various fields.

Franklin was not only a founding father and diplomat, but also a writer, publisher, translator, scientist and a civic innovator, who helped create the first public library and fire insurance company in America and founded the University of Pennsylvania. Munger—besides being Buffett’s

partner and vice chairman of Berkshire, a successful lawyer, investor and business leader—was also accomplished in architecture and a generous philanthropist.

Like Franklin, Munger believed that what he called “elementary worldly wisdom” required grasping the “fundamental four-discipline combination” of chemistry, engineering, math and physics—along with accounting, biology, economics, history, philosophy, psychology and statistics. He urged collecting from these disciplines diverse “mental models” which together would form a “latticework” of practical knowledge. According to Munger:

You must know the big ideas in the big disciplines and use them routinely—all of them, not just a few. Most people are trained in one model—economics, for example—and try to solve all problems in one

way. You know the old saying: to the man with a hammer, the world looks like a nail. This is a dumb way of handling problems.

He quoted Franklin, who said, “An investment in knowledge pays the best interest.” Munger was an avid reader who advised that wisdom comes from constant learning. In a 2007 commencement address at USC Law School, Munger aptly advised: “In my whole life, I have known no wise people who didn’t read all the time—none, zero.” Munger called himself a “certified biography nut” and joked how his kids think of him as “a book with a couple of legs sticking out.” He admitted that it sounded “funny,” but he said reading the old great works was a bit like “making friends of the eminent dead.”

Munger loved Adam Smith, the 18th century Scottish economist and moral philosopher widely regarded as the architect of modern economics and founder of the classical school of economic thought. Munger admired the idea of the invisible hand, which Smith described as the market mechanism that guides self-interested individuals to promote the public good, even without intending to do so.

As a student of economics and psychology, Munger appreciated that self-interest is both the motive of man and the magic of mankind: let merchants ply their trades and prices will deliver goods to their best uses. He recognized that markets, while imperfect and prone to errors, tend to allocate resources efficiently and reward value creation. Munger also understood that self-interest, when tempered by ethical standards and social norms, can be a powerful force for innovation and progress.

Munger quoted John Maynard Keynes “all the time.” He was especially fond of a paraphrase of the 20th century British economist by his teacher, Alfred Marshall, who said: “It is better to be vaguely right than exactly wrong.” Munger used this quote to stress the importance of focusing on business fundamentals over market predictions and to criticize overconfident belief in strong form stock market efficiency. He believed that investors should aim for a reasonable estimate of the intrinsic value of a business, rather than a precise forecast of performance, and seize opportunities when prices fall below value.

Munger also liked this Keynes quote:

“The market can stay irrational longer than you can stay solvent.” Besides the phrase’s appealing pith and punch, it implies the virtues of both conservatism and patience—speculative bubbles are dangerous, timing the market perilous. This quote encourages investors to approach finance with a sense of humility, recognizing the limits of their ability to predict short-term market movements. It aligns with Munger’s broader philosophy of pragmatism and the usefulness of focusing on a small number of big long-term opportunities, rather than many short-term ones.

Munger was also influenced by Charles Darwin, the 19th century British naturalist and biologist. He was fond of Darwin’s theory of evolution by natural selection, which was popularized by a phrase attributed to him by a later writer: “It is not the strongest of the species that survives, nor the most intelligent; it is the one most responsive to change.” Munger also liked Darwin’s assertion that “Ignorance more frequently begets confidence than does knowledge.” These points capture Munger’s views on the importance not only of learning, but adaptability and humility in the face of uncertainty and complexity.

Munger devoured business biographies as well, especially tales of valuable entrepreneurial pivots. A favorite example is the story of the cash register, which Munger called one of the “greatest contributions to civilization.”

A struggling merchant, John Patterson, bought a crude cash register to use in his store, which instantly swung from loss to profit because the device made it harder for employees to steal. Patterson was so impressed with the invention, he went into the cash register business, founding in 1884 the National Cash Register Company (NCR), which became one of the most successful companies in history that created enormous value for its customers.

Munger’s prodigious reading and lecturing gained a wide following from academics and journalists to entrepreneurs and innovators, including *The Wall Street Journal*, *The Economist* and *Forbes*, as well as Robert Cialdini, Bill Gates and Malcolm Gladwell. A wonderful collection of 11 Munger lectures, along with other notes and commentary, is published by Peter Kaufman as *Poor Charlie’s Almanack*, a tribute modeled on Franklin’s *Poor Richard’s Almanack*.

Enduring Legacy

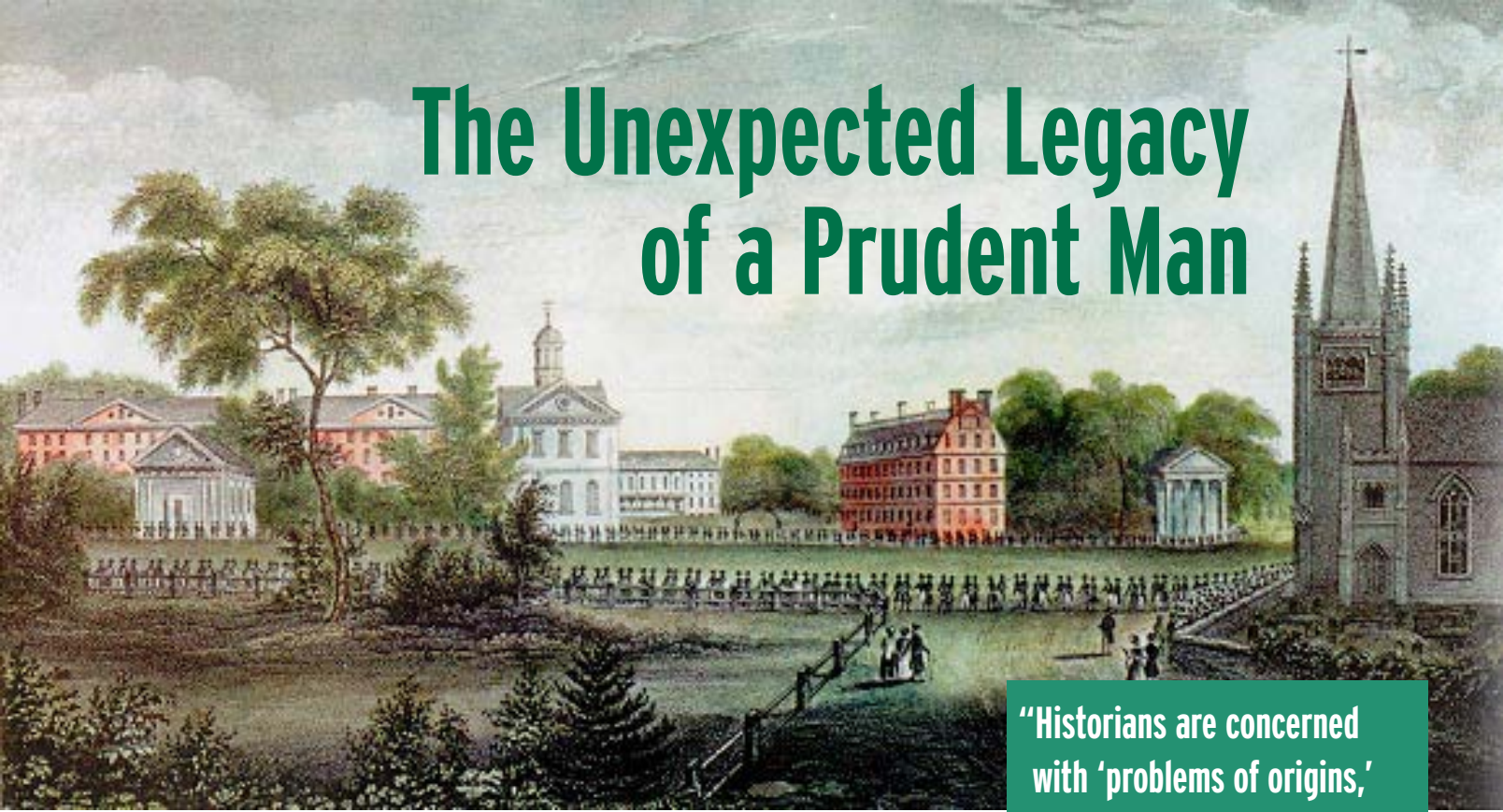
One of Munger’s most amusing quips came just after his 90th birthday, when a friend asked him how it felt to be 90, and he sighed, saying, “Oh, to be 80 again.” Around his 80th birthday, another friend gave him an inspiring present: a 1744 edition of *Cato Maior de Senectute*, or *Cato the Elder on Old Age*, a book by Cicero in praise of aging that Ben Franklin had translated from the Latin. The erudite Munger had not known of this book and “went into orbit” on reading it. Its message of living a long life to the fullest and then sharing the accumulated wisdom resonated, and Munger proceeded to live life that way for two more decades.

One of Munger’s best-known witticisms was: “All I want to know is where I’m going to die, so I’ll never go there,” and it is possible to lament that he ultimately went there and succumbed. Yet the quip was not about the fear of death, which Munger did not suffer, but a lesson in perhaps his most powerful mental model, the practice of inverting. Reading the ancient eminent mathematician Jacobi taught Munger—who then taught the rest of us—the mantra “invert, always invert.” Munger advised that “many hard problems are best solved when they are addressed backwards,” which often means first stating what to avoid rather than what to seek.

Munger’s absence from the scene is a seismic change, but to cite a favorite quote of yet another strong influence on Munger and Buffett, Professor Benjamin Graham: “*Plus ça change, plus c’est la même chose.*” Everything changes, but things also stay the same. A final Munger comment on Berkshire still rings true: “We’re not looking for a lot of change at Berkshire. We like things the way they are.” Munger’s legacy endures, even if he is now among our “eminent dead” friends. 💰

Lawrence A. Cunningham is special counsel in Mayer Brown’s New York office and the author or editor of many books, including *The Essays of Warren Buffett*, *Quality Investing and Berkshire Beyond Buffett*. He is a member of the Museum’s Board of Trustees, as well as the Financial History editorial board.

The Unexpected Legacy of a Prudent Man



By Mark Higgins

A POWERFUL INSIGHT THAT EMERGES from the study of financial history is that solutions to past problems often sow the seeds of future ones. But this principle is often hidden by the glacial pace of the transformation process. This is why financial historians often feel like time-lapse photographers who reveal the motion of financial transformation by separating the snapshots of events with years rather than milliseconds.

The evolution of the Prudent Investor Rule fits neatly in this framework. This article reveals how the rule evolved over nearly 200 years to intermittently solve and cause problems. The history begins in the 1820s with the establishment of the Prudent Man Rule. It then recounts its slow evolution over the next 160 years, culminating in its conversion into the Prudent Investor Rule at the end of the 20th century. The narrative then returns to the present and explains how trustees now use the Prudent Investor Rule to rationalize progressively higher levels of portfolio diversification, despite

Illustration of Harvard University with an alumni procession, dated 1830s. This was the same decade that *Harvard College v. Amory* reached the Supreme Court of the State of Massachusetts.

mounting evidence that such efforts are more likely to increase fees, impair performance and distract trustees from more important financial tasks. In 2024, it once again appears that the current interpretation of the Prudent Investor Rule has outlived its utility, making it necessary for another revision.

Origin of the Prudent Investor Rule

On October 23, 1823, a wealthy merchant named John McLean passed away in Boston, Massachusetts. In his will, he bequeathed \$50,000 to two sets of beneficiaries using a structure commonly referred to as a remainder trust. The first beneficiary was his wife, Ann McLean, who was entitled to the income produced by the trust for the remainder of her life. A second set (Harvard College and Massachusetts General Hospital) was entitled to receive what remained after Ann McLean's death. The will listed Jonathan and Francis Amory as the executors, and it provided them with a flexible set of investment guidelines.

The problem with McLean's trust was that the trustees representing Ann McLean and the remaindermen held different beliefs regarding the flexibility of the investment guidelines. The disagreement surfaced when the trustees offered to

"Historians are concerned with 'problems of origins,' but they must remember that all origins are also conclusions of previous periods."

— Robert Sobel, author of *The Great Bull Market: Wall Street in the 1920s*

turn over the trust assets to the remaindermen in exchange for a guaranteed annual payment of 6% per year for the remainder of Ann McLean's life. The trustees based this requirement on the expected return of securities in which much of the estate was already invested. These included two manufacturing company stocks, an insurance company stock and a bank stock. The manufacturing company stock was most concerning to the remaindermen, as they believed it was too risky and, thus, inconsistent with John McLean's instructions.

On February 9, 1824, the trustees sought approval of their estate plan by presenting the portfolio to the Supreme Court of Probate in the State of Massachusetts. The remaindermen voiced no formal objection in court, even though they had expressed disapproval on several occasions during the preceding year. The court approved the plan, and it seemed that the case would quickly disappear in the annals of history.

Over the next several years, however, Ann McLean received an income yield that far exceeded 6%, and the remaindermen witnessed a sharp decline in the market value of the portfolio. In October 1828, the disagreement re-entered the courts when Francis Amory (the only surviving trustee) sought to tender his resignation from the trust and presented the account to the probate court for approval. The remaindermen demanded that Amory settle the account by paying the difference between the current and original market value of the insurance and manufacturing stocks, which they argued did not meet the investment guidelines. After several years, the case of *Harvard College v. Amory* reached the Supreme Court of the State of Massachusetts. Justice Samuel Putnam decided the case in favor of Amory and delivered the court's final opinion. It included two sentences (below), which became known as the Prudent Man Rule.

"All that can be required of a trustee to invest, is, that he shall conduct himself faithfully and exercise a sound discretion. He is to observe how men of prudence, discretion and intelligence manage their own affairs, not in regard to speculation, but in regard to the permanent disposition of their funds, considering the probable income, as well as the probable safety of the capital to be invested."

Justice Putnam's ruling established an important legal precedent which was subsequently used to judge the prudence of trustees' decisions based on the soundness of the decision-making process, rather than discrete outcomes. This was a critical distinction, as it recognized the inherent uncertainty of investing. But the rule did not give trustees carte blanche on their decisions. On one hand, the ruling provided fair protection for trustees who cannot possibly predict investment outcomes with precision. On the other hand, it forced trustees to establish and prove adherence to a sound investment process.



Portrait of John McLean, the wealthy merchant whose last will and testament led to disagreements resulting in the Prudent Man Rule.

Contraction and Expansion of Trustee Flexibility

After the ruling by Justice Putnam, interpretations of the Prudent Man Rule slowly evolved as new precedents were established by case law. Throughout the remainder of the 1800s, precedents tended to restrict the types of investments in which trustees felt comfortable investing. For example, the 1869 case of *Matter of King v. Talbot* tilted trustees more toward the "safety of capital," thus encouraging greater investment in government bonds and mortgages, rather than common stocks.

As case law continued to accumulate in the early 1900s, the American Law Institute set out to create a consolidated reference of key legal principles. This culminated in the publication of the American Law Institute's *Restatements of Law* in 1935. Among the first volumes was the first *Restatement of Law Trusts*, and the Prudent Man Rule served as an important guiding principle.

Soon after the United States exited the Depression and World War II, trustees pressured the American Law Institute to revise the *Restatement of Law Trusts*. At issue, once again, was the need for greater investment flexibility. Ironically, the problem was that "legal lists" that trustees used to determine allowable investments had limited their exposure to common stocks. While stocks had plummeted during the Great Depression, they had recovered

over time. Non-government bonds also experienced massive losses during the Depression, but many never recovered. This strengthened trustees' interest in common stock investments.

The second *Restatement of Law Trusts* (commonly referred to as *Restatement of Law Trusts 2d*) was published in 1957 to address this problem. The first notable change was the creation of broader, approved "investment categories," as well as the use of more ambiguous language on what constituted prudent investment decisions. Contrary to expectations, however, the revision continued to discourage risk taking. One problem was that by defining prudence in accordance with standard practices at the time, few trustees were willing to invest in non-conventional securities as markets evolved. A second problem was that the guidance on prohibited investments proved more restrictive than intended. Problematic language included restrictions on "speculative stock" and "buying discounted bonds." As a result of these issues, throughout the mid-1900s, most trustees continued investing primarily in low-risk government bonds and high quality, dividend paying stocks. In 1974, their conservatism intensified even further after the passage of the Employee Retirement and Income Security Act (ERISA).

An Unanticipated Impact of ERISA

President Gerald Ford signed ERISA into law on September 2, 1974. The primary objective was to strengthen protections for employees covered by private pension plans. However, as is often the case with new regulations, ERISA produced several unexpected side effects. The impact on the nascent venture capital (VC) industry was especially troubling. Incorporation of the Prudent Man Rule into ERISA required trustees to discharge their duties "by diversifying the investments of the plan so as to minimize the risk of large losses." Many trustees interpreted this language as an implicit ban on VC investments, which routinely invested in multiple companies that were likely to produce large losses.

ERISA plan trustees responded by limiting exposure to VC investments, as well as traditional investment fund managers that ventured far beyond high-quality stocks and bonds. Non-ERISA plans, such as public pensions, foundations and endowments, adopted similar practices out of an

The Overlooked Obligation to Evaluate Return on Investment Fees

“A trustee may only incur costs that are appropriate and reasonable in relation to the assets, the purposes of the trust, and the skills of the trustee... Wasting beneficiaries’ money is imprudent.”

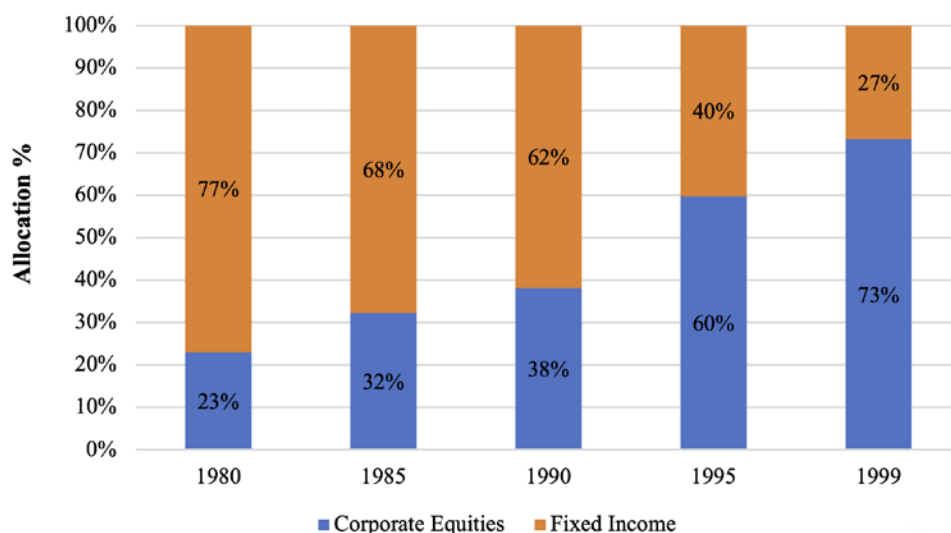
Uniform Prudent Investor Act (UPIA)

The *Restatement of Law Trusts (3d)* incorporated what was known as the Uniform Prudent Investor Act (UPIA). In 1994, the National Conference of Commissioners on Uniform State Laws approved the UPIA and recommended its enactment in all states. As of December 31, 2023, nearly all 50 states have codified the UPIA into law.

Most trustees appreciate the diversification principles required under the UPIA, but few appreciate the obligation to manage costs. Yet this responsibility is clearly articulated in Section 7 of the UPIA. The quote above provides the specific language. As trustees continued to add investments that increased asset management fees and corresponding costs of portfolio oversight over the last 30 years, few asked themselves the critical question of whether the incremental benefits exceeded the incremental costs. With each passing year, therefore, the costs of diversification began to increasingly outweigh the benefits.

abundance of caution. For the remainder of the 1970s, VC firms were unable to raise sufficient capital from institutional plans, which caused pain for the nascent technology industry. Desperate to reestablish relationships with institutional plan trustees, the National Venture Capital Association lobbied the Department of Labor (DoL) to permit a more lenient interpretation of the Prudent Man Rule.

FIGURE 1: Asset Allocation of Private and Public Pension Funds (1980–1999)



Source: *Statistical Abstract of the United States: 2000*, U.S. Census Bureau, 530.

In June 1979, the DoL issued new guidance to allow for a more flexible interpretation of the Prudent Man Rule. On June 21, 1979, Ian Lanoff, the administrator of pension and welfare programs stated, “Although securities issued by a small or new company may be a riskier investment than securities of a blue chip company, such an investment may be entirely proper under ERISA’s prudence rule.” The DoL’s shift on the issue of prudence restored VC funding. In addition, trustees had the flexibility they needed to allocate more heavily to common stocks. This contributed to a multi-decade shift of institutional investment plans toward publicly traded equities. In 1980, equity allocations constituted 23% of pension plan allocations. By 1999, equity allocations constituted 73% of their portfolios (See Figure 1).

Modern Portfolio Theory and the *Restatement of Law Trusts 3d* (1992)

In 1990, Harry Markowitz was one of three co-recipients of the Nobel Prize in Economic Sciences. The award recognized the impact of a paper he had written nearly four decades earlier. Published in March 1952, Markowitz’s article, entitled “Portfolio Selection,” provided a mathematical construct that reframed the discipline of portfolio management. Mathematical models based on MPT enabled investors to visualize the return and risk attributes of a portfolio by inputting estimates of

the expected return, volatility and correlations of various asset classes in the portfolio. By measuring return and risk at the portfolio level, the risk of any single investment became less impactful. This gave trustees greater leeway to invest in riskier assets, provided that total portfolio risk was tolerable.

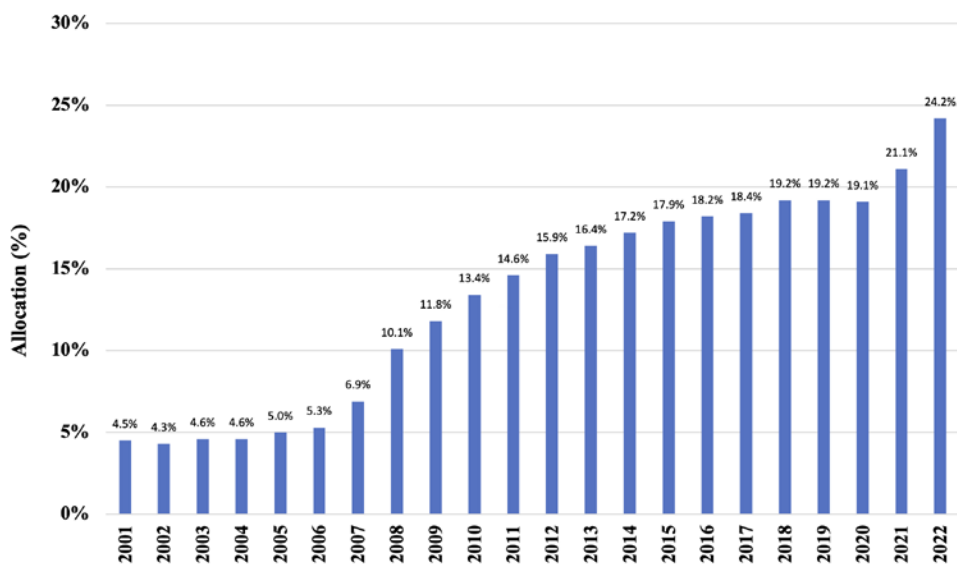
MPT also provided the American Law Institute with a powerful tool to provide trustees with the flexibility that they long desired. In 1992, they published a third revision of the *Restatement of Law of Trusts*. By embracing MPT and refocusing prudence on the “totality” of portfolio risk, trustees finally felt empowered to venture beyond the most conservative stocks and bonds. The restatement also instructed trustees to create a diversified portfolio unless specifically instructed otherwise. Finally, the restatement modernized the language of the Prudent Man Rule by renaming it the Prudent Investor Rule.

Among the most significant impacts of the Prudent Investor Rule was that it gave trustees license to invest in a wide variety of new asset classes and sub-asset classes. This was critical to the rise of alternative asset classes in institutional portfolios.

The Rise of Alternative Investments and Corresponding Plan Costs

In 2000, David Swensen, CIO of the Yale Investments Office, published his best-selling book, *Pioneering Portfolio*

FIGURE 2: Public Pension Fund Allocation to Alternative Asset Classes
(2001–2022)



Source: *Public Pension Plans Data*. Accessed June 28, 2023. <https://publicplansdata.org/public-plans-database/>

Note: Alternative assets include assets categorized as private equity, hedge funds, miscellaneous alternatives, commodities and other. Although percentages varied, roughly 80–85% of alternative allocations consisted of private equity and hedge funds in any given year.

Management. The book explained the strategy that he employed to produce exceptional returns for the Yale University endowment. Soon after its publication, institutional investors rushed to reengineer the “Yale Model,” but nearly all of them copied Yale’s strategy only at a superficial level, mistakenly concluding that the mere addition of alternative asset classes—such as venture capital, buyout funds and hedge funds—was all that was required. Few appreciated that the key to Yale’s success was a culture of excellence that was hardwired into the mind of every investment professional, trustee and asset manager who touched the portfolio. The Yale Model depended on the presence of a carefully crafted investment ecosystem that few institutions could hope to replicate. Nevertheless, soon after the publication of *Pioneering Portfolio Management*, trustees began chasing Yale’s returns by investing heavily in alternative asset classes. Figure 2 shows the total allocation of public pension plans to alternative asset classes from 2001 to 2022.

Several decades have now passed since institutional investment plans began their steady migration toward alternative asset classes, and there is now a reasonably robust data set to evaluate whether the

strategy has paid off. The results are not encouraging. In fact, in a recent study by Richard Ennis, one of the original founders of the institutional investment consulting profession, the use of alternative investments in a large sample of public pension plans resulted, on average, in a negative alpha of approximately 1.2% per year.

A New Mandate for the Prudent Investor

The current interpretation of the Prudent Investor Rule appears to have outlived its utility once again. Adding alternative asset classes and using active managers in traditional asset classes is invariably accompanied by significant asset management fees, consulting fees, staff salaries, custodial fees and the hidden, but substantial, cost of neglecting other important financial priorities. Trustees often pursue diversification with little regard for the associated costs—and even less regard for their fiduciary obligation to ensure that the fees they pay on behalf of their beneficiaries are well spent.

The Prudent Investor Rule has now completed yet another long-wave transformation from solution to problem. Many, if not most, trustees place too much value on incremental increases in diversification

and fail to properly consider the offsetting costs and probability of success. This behavior persists because trustees are surrounded by people who believe that their business models, careers and even their sense of self-worth depend on maintaining the status quo. The greatest irony is that all stakeholders can resurrect their value propositions by acknowledging the limits of their capabilities and discovering new value propositions to replace those that ceased adding value long ago. Perhaps the American Law Institute can serve as a catalyst of reform by issuing a fourth *Restatement of Law Trusts* and place greater emphasis on the obligation of trustees to properly consider plan fees before writing larger and larger checks using other people’s money. 💰

Mark Higgins, CFA, CFP® is a financial historian, experienced institutional investment advisor and frequent contributor to Financial History magazine. His book, Investing in US Financial History, recounts the full financial history of the United States from 1790 to 2023. The book will be published in February 2024 by Greenleaf Book Group.

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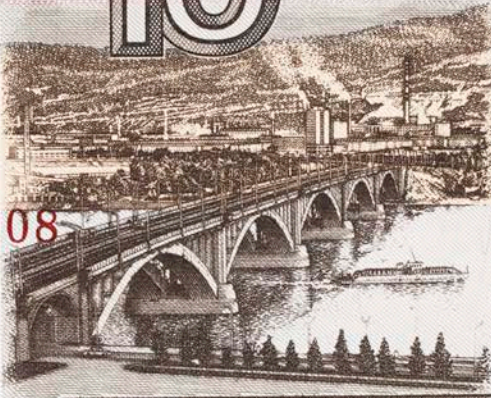
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ПОДДЕЛКА
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КРАСНОЯРСК

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THE RUSSIAN DEBT DEFAULT, 25 YEARS LATER

By Peter C. Earle

TRADING DESKS were relatively quiet throughout the morning of September 29, 1998. The news cycle that day—now 25 years ago—was dominated by the Clinton-Lewinsky scandal, periodically interrupted by updates on the conflict in Kosovo. Two days earlier, the Greenwich-based hedge fund Long-Term Capital Management (LTCM) found itself in a tense meeting with major Wall Street banks at the New York branch of the Federal Reserve. The discussion revolved around LTCM's precarious financial situation, which would ultimately serve as a stark example of how a mixture of excessive leverage and academic overconfidence could potentially disrupt an entire economy.

LTCM had heavily invested in Russian government bonds, known as GKO's (*Gosudarstvennye Kratkosrochnye Obyazatel'stva*, Russian short-term obligations akin to bills or notes) as part of its trading strategy. When the Russian

financial crisis struck in the summer of 1998, the value of Russian bonds plummeted, leading to a debt default and the devaluation of the ruble. LTCM incurred substantial losses as a result. Those losses played a significant role in the financial turmoil that engulfed LTCM, prompting the Federal Reserve to hastily intervene to mitigate systemic risks to the global financial system.

On Tuesday, September 29, the Federal Reserve shook global financial markets with a sudden intra-meeting 25 basis point rate cut, accompanied by the following statement:

The action was taken to cushion the effects on prospective economic growth in the United States of increasing weakness in foreign economies and of less accommodative financial conditions domestically. The recent changes in the global economy and adjustments in US financial markets mean that a slightly lower federal funds rate should now be consistent with keeping inflation low and sustaining economic growth going forward.

The unexpected policy move sent markets rocketing skyward. In the short

remainder of that session, the Dow Jones Industrial Average gained 2.9%, the S&P 500 leapt by approximately 2.6% and the NASDAQ Composite posted a 2.1% increase. This was the denouement of the Russian debt meltdown which had begun two months earlier.

Back to the Beginning

While the immediate trigger for Russia's 1998 debt default was the Asian financial crisis, the origins of the collapse can be traced back to the demise of the Soviet Union.

It is difficult to understate the challenges associated with the conversion of a massive collectivist state into even a middling market economy, in no small part because there are virtually no historical precedents to draw from. The aftermath of the USSR's dissolution in 1991 left an inefficient and poorly maintained industrial economy behind, one in desperate need of both mountains of fresh capital and market expertise. Adding to the overall difficulties were that the initial conversion from a communist economy to a more market-oriented posture was accomplished by a swift privatization which granted private

Russian 10 rubles bank note, dated 1997.

property rights over gigantic state-owned enterprises to politically connected former directors. With limited competition, there was little incentive to improve the operational efficiency or administrative structure of those firms and sectors.

Additionally, political pressures hindered the executive management—in particular where workforce reductions were needed—from introducing changes which in some cases were essential to the financial stability of the formerly state-owned enterprises. Also, the development of contract law and broader legal frameworks so pivotal to commercial matters lagged following the demise of the Communist regime.

But the most formidable challenge facing the fledgling Russian republic was arguably the enormous burden attending the debt of the former USSR. In 1992, the debt load was staggering, amounting to roughly 117% of the nation's GDP. That level of indebtedness would be exceptional even for a country not grappling with the substantial transition difficulties facing the new Russia. Nevertheless, by the mid-1990s the country began to wrest control over its economy.

After several years of economic mismanagement, inflation—which had reached a staggering 131% in 1995—had receded to just 11% by 1997. Simultaneously, as domestic industries integrated into global markets, Russia's trade surplus began to approach equilibrium. And, although corruption was widespread with tax collection both ineffective and inconsistent, there were signs that the former Soviet Union was making progress.

Oil, upon which the Russian economy was (and remains) heavily reliant, began 1997 at around \$26 per barrel, marking the highest price since the Gulf War of 1990-1991. With oil exports increasing from just under \$15 billion (USD) in 1994 to over \$23 billion in 1996, the foundation of Russia's economy began solidifying.

Reaching an agreement with creditors concerning the repayment of the USSR's debt was a crucial step towards deeper engagement with market economies in Europe and Asia. Doing so, it was widely believed, would instill confidence in Russian financial institutions and would lay the foundation for sizable public and private investments in its domestic industries, many of which were still in precarious commercial health. At that point, both the World Bank and the International Monetary Fund were providing assistance and coordinating programs with Russian political leaders in pursuit of that goal. And, by the spring of 1996, the Russian economy had stabilized to a sufficient degree to initiate concrete negotiations regarding the repayment of the debt inherited from the former USSR.

Speculative Attack

Since the end of the Bretton Woods agreement in 1971, international foreign exchange markets have seen a remarkable increase. The average daily volume of transactions surpassed \$1 trillion (USD) in 1996 and is currently estimated at over \$5 trillion daily (USD, 2023). While that growth has benefitted international trade via deep, broad and liquid markets for

spot and derivative exchange rate products, smaller nations with tighter monetary "floats" sometimes experience substantial pressure on their exchange rates. At times, that pressure arises from the simple dominance of sellers over buyers or vice versa. Other times, however, coordinated efforts to manipulate currency rates and induce policy responses have been orchestrated.

When faced with the effects of currency speculation, governments must generally choose from three alternatives: (1) utilize their foreign exchange reserves to support the currency at a desired level, (2) increase domestic interest rates to draw in new capital or discourage capital outflows or (3) stand fast and permit the currency to devalue. Each of these choices carries significant implications for both economic policy and macroeconomic outcomes. Raising interest rates to safeguard the currency is likely to slow or choke off economic growth, while allowing the currency to depreciate may result in elevated inflation and perhaps even reprisals from trade partners.

In the summer of 1997, several Pacific Rim nations experienced currency crises, beginning with a bear raid on the Thai baht. That was followed by attacks on the currencies of Indonesia, South Korea, the Philippines, China, Hong Kong, Malaysia and others. As is customary, the targeted states engaged in extensive efforts to defend their currencies. The use of interest rate hikes predictably triggered stock market downturns and before long declining economic output. Sharp declines in global stock markets further exacerbated



Treasury Secretary Robert Rubin (right) and Federal Reserve Chairman Alan Greenspan testify before the Senate Foreign Relations Committee on the International Monetary Fund, 1998.



YURI KADOBNOV

Russian President Boris Yeltsin shakes hands with the chairman of the Rossiysky Kredit Bank Vitaly Malkin, as Most Media Holding President Vladimir Gusinsky, the head of the Rosprom-YUKOS Group Mikhail Khodorkovsky and Vladimir Potanin of the Interros Group look on during their meeting in the Kremlin on how to restore confidence in Russia's ailing financial markets, June 2, 1998.

the financial turmoil, leading to contagion which soon thereafter engulfed multiple economies in the region—even those whose currencies had been spared.

It remains uncertain whether the 1997–1998 campaign against a wide swath of national currencies was a coordinated endeavor, orchestrated by a significant economic syndicate, or whether it unfolded spontaneously as initial successes attracted the involvement of other previously uninterested parties. What is clear, however, is that whether collectively or through a disorganized but growing consortium, as the wave of global currency assaults progressed, it did so with sharpened skills and growing ambitions.

In late 1997, the speculators turned their attention to Russia, leading the Russian central bank to expend over \$5 billion (USD equivalent) protecting the ruble. As the earlier-targeted Asian economies grappled with elevated interest rates and declining economic conditions, the decreased demand for oil (and commodities more broadly) led to falling prices.

Given Russia's central role as a global commodity exporter, its economy was struck especially hard by sliding oil prices.

The initial defense of the ruble in the final two months of 1997 yielded success, but the speculators returned in force in June of 1998. While it is not clear why the ruble bears withdrew only to return six months later, one explanation is the emergence of a series of political crises within the Yeltsin government. Political instability, real or perceived, is likely to reduce the confidence of lenders and investors, potentially making a national currency a more lucrative target.

By early August 1998, Russia's foreign exchange reserves were nearly depleted. After enduring a significant 66% devaluation during the initial three weeks of that month, the Russian central bank conceded, officially devaluing the ruble on August 17, 1998. A 90-day moratorium was imposed on certain debt payments, while ruble-denominated debt remained frozen pending unannounced restructurings. That same day, the Russian government

announced that various sovereign obligations, including securities held by foreign banks and financial institutions, would have to be reconfigured.

After losing two-thirds of its value during the initial three weeks of the month, the Russian central bank announced a devaluation of the ruble's pegged rate on August 17, 1998. Several major Russian financial institutions failed as the reverberations spread globally. Bankers Trust, an American financial institution, found itself compelled to sell to Deutsche Bank due to catastrophic losses incurred on Russian bonds. A stampede into US Treasuries, the dollar and gold ensued.

Yet the most significant consequence, one which far surpassed all others, was the implosion of Long-Term Capital Management (LTCM). The revered relative value fund founded and managed by Wall Street luminaries and several Nobel laureates was pushed close to insolvency due to the widening spreads triggered by the worldwide rush into safe haven assets. Concerned about the potential

escalation of volatility in the event of the fund's sudden collapse, the Federal Reserve Bank of New York orchestrated a takeover by its primary counterparties, leading to its methodical liquidation. (Though occasionally described as a bailout, the resolution of LTCM was in reality a swiftly implemented takeover. The fund was not rescued, nor did it receive an injection of taxpayer funds, but rather it was prevented from collapsing outright—which may have had globally destabilizing consequences.)

Back in Russia, domestic inflation surged dramatically due to fiscal monetization. It soon exceeded 80% annualized as Russian state support for heavily subsidized industries declined sharply. According to some accounts during the remainder of 1998 and into early 1999, certain remote regions of Russia briefly reverted to barter systems reminiscent of the late Soviet economic environment.

Following the 1998 debt crisis, there were concerns raised about Russia's status as a creditor state recognized by the Paris Club. The terms of this recognition included the adoption of the Soviet exchange rate, which was 0.6 rubles per dollar, in contrast to the prevailing exchange rate of five to six rubles per dollar. Additionally, the accounting of Russia's assets encompassed debts owed by former Eastern Bloc nations, as well as Cuba and Vietnam. However, despite these challenges, Russian financial institutions substantially increased their foreign liabilities to 17% of their total assets in 1997. The Russian government's calculations rested on the assumption that a 2% growth rate in the ensuing years would be sufficient to offset the rising costs of debt service.

Nevertheless, the ruble's devaluation ultimately rendered prices of domestic goods and services significantly more competitive than imported items. Oil prices rebounded in 1999 and 2000, prompting some investors to view the depressed prices of Russian assets as an attractive buying opportunity. Despite the challenging conditions that persisted throughout the late summer and fall of 1998, Russia's GDP soon returned to robust growth, expanding by over 6% in 1999 and a remarkable 10% in 2000.

The Legacy of the Crisis

Markets have long demonstrated their capacity for enhancing human well-being and freedom. It is surprising that even



The Moscow Interbank Currency Exchange building, photographed in 2007.

today there is a lack of established wisdom, and little urgency, to develop means of transforming centrally planned states into market economies. This was certainly the case in 1990, and for the most part remains so today. The Russian debt crisis underscored the critical importance of implementing market-based processes rather than relying on privatization through “gifting.” It also highlighted the risks associated with economic dependency on a single or a few commodity exports. Perhaps the most significant lesson learned was the revelation of the new dynamics of financial contagion. Unprecedented prior to the 1997–1998 crisis period, the increased connectivity driven by technology and the growing integration of markets and economies due to globalization have transformed equity markets into a worldwide conduit for panic.

The hardship that emerged in the wake of the 1998 debt default led many Russians to reconsider the lure of market economics, despite the relatively short-lived nature of the tumult. While few advocated an outright return to communism, a significant portion of the population grew to favor the concept of a more tightly regulated economy led by a strong leader. That shift in sentiment played a role in Vladimir Putin's rise to power in late 1999, when he emerged as a leader viewed as

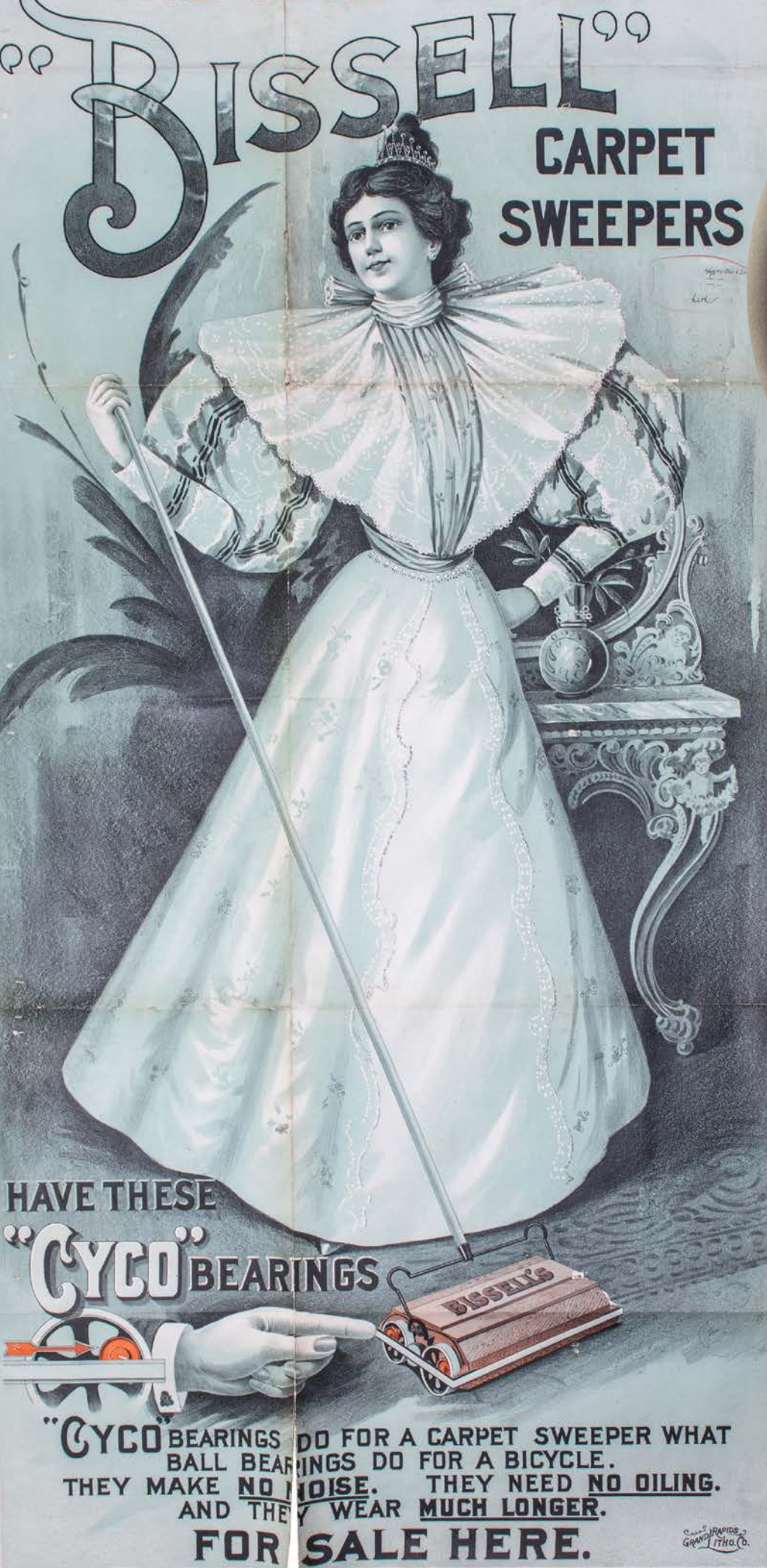
providing the stability and direction many Russians sought.

The 1998 crisis also led Russia to weatherize its economy, a move which has led to its ability to withstand successive iterations of international sanctions. Economic reforms and improved fiscal policies formed a foundation for partial economic autarky, including the diversification of foreign exchange reserves, reduced reliance on foreign debt and the accumulation of a substantial gold and commodity stockpile. A focus on import substitution and self-reliance in various industries has generated reduced dependence on foreign goods and technologies, which became important when facing international embargoes. Overall, the experiences from the 1998 crisis contributed to Russia's resilience in the face of sanctions imposed in 2014 after the annexation of Crimea and more recent sanctions following the Ukraine invasion.

The Russian debt collapse of 1998 stands as a defining moment in modern economic history, marking the apex of the tumultuous transition from the Soviet era to a market-driven economy. A quarter of a century later, it is evident that the crisis shaped and continues to shape Russia's economic and political course.

The dissolution of the Soviet Union brought hopes for a transformation resulting in market reforms and democratic ideals. It proved a loftier challenge than expected, its early years marred by economic dislocation, ineffective and nonexistent institutions and haphazardly undertaken privatization. The Russian debt debacle of 25 years ago was not merely an isolated event, but rather the culmination of dashed hopes for a transformed capitalist Russia. It stands as a formative juncture that continues to shape the Russia we confront today, reminding us of the enduring impact of history on the trajectory of all nations. \$

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Courtesy of BISSELL Inc.

Anna Sutherland Bissell

**America's First
Female CEO**

By Stephanie Forshee

ANNA SUTHERLAND BISSELL was a sweeping sensation at the turn of the 20th century. She is known for becoming the first female chief executive officer of a major corporation—even before that exact term was used. She led the company from 1889 to 1919, long before Bissell made vacuum cleaners. That was when the business produced carpet sweepers and thrived under the leadership of Anna, who excelled in marketing, sales and providing employees a healthy and warm workplace.

"She's an example of a hard-working immigrant," says Mark Bissell, the current CEO of Bissell Inc. and Anna's great

Left: Advertising poster for Bissell carpet sweepers, circa 1900.

Above: Portrait of Anna Sutherland Bissell, America's first female CEO.

grandson. “Her Scottish roots and background really came through in her ability to raise a family, be involved in the community and run a growing business.”

Moving to America

Born in Nova Scotia, Canada on December 2, 1846, Anna Sutherland was the daughter of a Scottish sea captain and the granddaughter of one of the earliest Canadian settlers. Her family moved to De Pere, Wisconsin when she was four years old. At the age of 16, Anna became a teacher with ambitions of one day becoming a nurse.

Anna was 19 years old when she met a man named Melville Bissell. The two fell in love and were married. They moved to Kalamazoo, Michigan, where the young couple started a crockery business with Melville’s father: Bissell & Sons, which later relocated to Grand Rapids, Michigan.

Both Anna and Melville contributed to the store. Their eldest daughter, Anna Bissell McCay, would later recall in her memoir that her mother rushed to finish her housework and would be in the shop by mid-morning every day to help where she could.

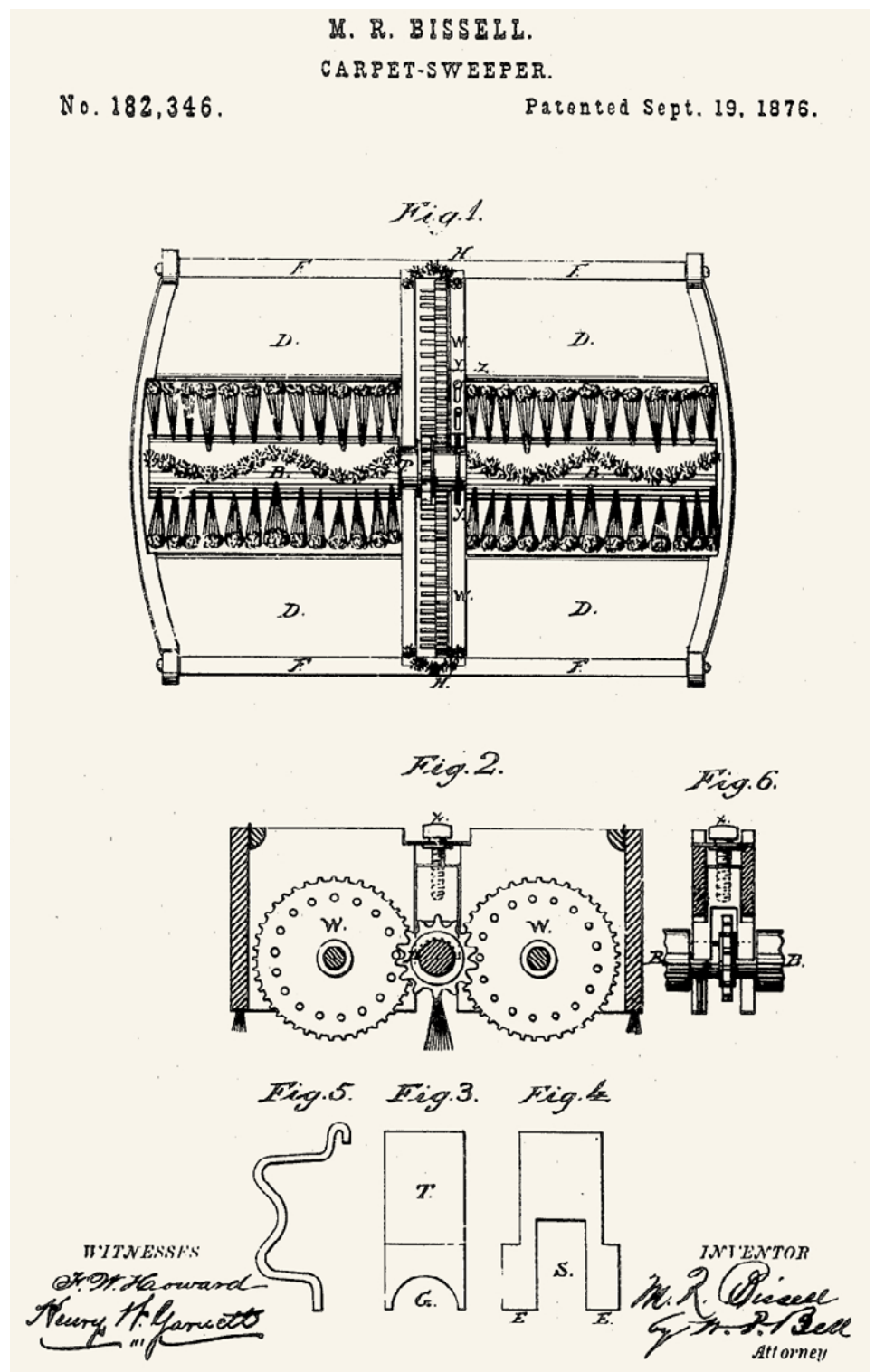
One day, Anna complained about the piles of sawdust from cleaning the rugs in the shop. At the time, most people still used carpet beaters, made of wiry pieces of steel, to bang out the dust from the rugs in their homes and businesses.

Convinced there must be a better way, Anna confided in her husband. The mechanically-minded man began to brainstorm ways to help his wife—and eventually, women around the world.

Melville invented a carpet sweeper made largely of hog bristles. His wasn’t the first carpet sweeper, but it was his that solved a problem that others could not. Its “broom action” set it apart from competitors, as its cog wheels produced “positive rotation on the brush.”

The Bissell carpet sweeper was patented in 1876, the same year the telephone was invented. Anna and Melville soon began selling carpet sweepers to other business owners—to give them more time to focus on the needs of their businesses.

When Anna and her husband first started making the sweepers, they traveled from town to town in hopes of landing major sales for the units, which were priced at \$1.50. One time, when in



Design drawings for the Bissell carpet sweeper, US patent 182346, September 19, 1876.

Philadelphia, the couple split up and each took one side of the main street. They made plans to meet up after visiting each business. At the end of the street, the two reconnected. It’s said that Melville was beaming with pride with the connections he had made and samples he had given out. But it was Anna who had something

to show for their efforts. It turns out she had personally convinced none other than John Wanamaker to place an order for the sweepers at his iconic department store.

She basically said, “That’s nice, Melville,” as Mark Bissell believes the interaction to have gone. “That’s a fun story that always gets laughs from our customers.”

The Wanamaker order was an important one for business, as it was a credible name investing in the Bissell carpet sweeper.

Years later, in the 1890s, Queen Victoria provided another invaluable endorsement. She was said to have the palace “Bisselled” every week.

For good reason, Anna, who one employee referred to as “a crackerjack saleslady,” was in charge of sales and marketing.

Sweepers Ablaze

In Bissell’s early years, the sweeper business moved homes a few times as the company grew quickly.

For the first two years, Bissell’s sweepers were manufactured at 27 Canal Street in Grand Rapids. Then, in 1880, a new plant was opened in the city’s old Iron Clad Building, at the foot of Erie Street. Then, in 1882, Bissell built a large new brick factory nearby, along the Grand River. Two short years later, at about 7 A.M. on the cold, windy morning of March 12, 1884, a fire broke out that destroyed several businesses, including the newest Bissell building. All of Bissell’s 90 employees made it out safely.

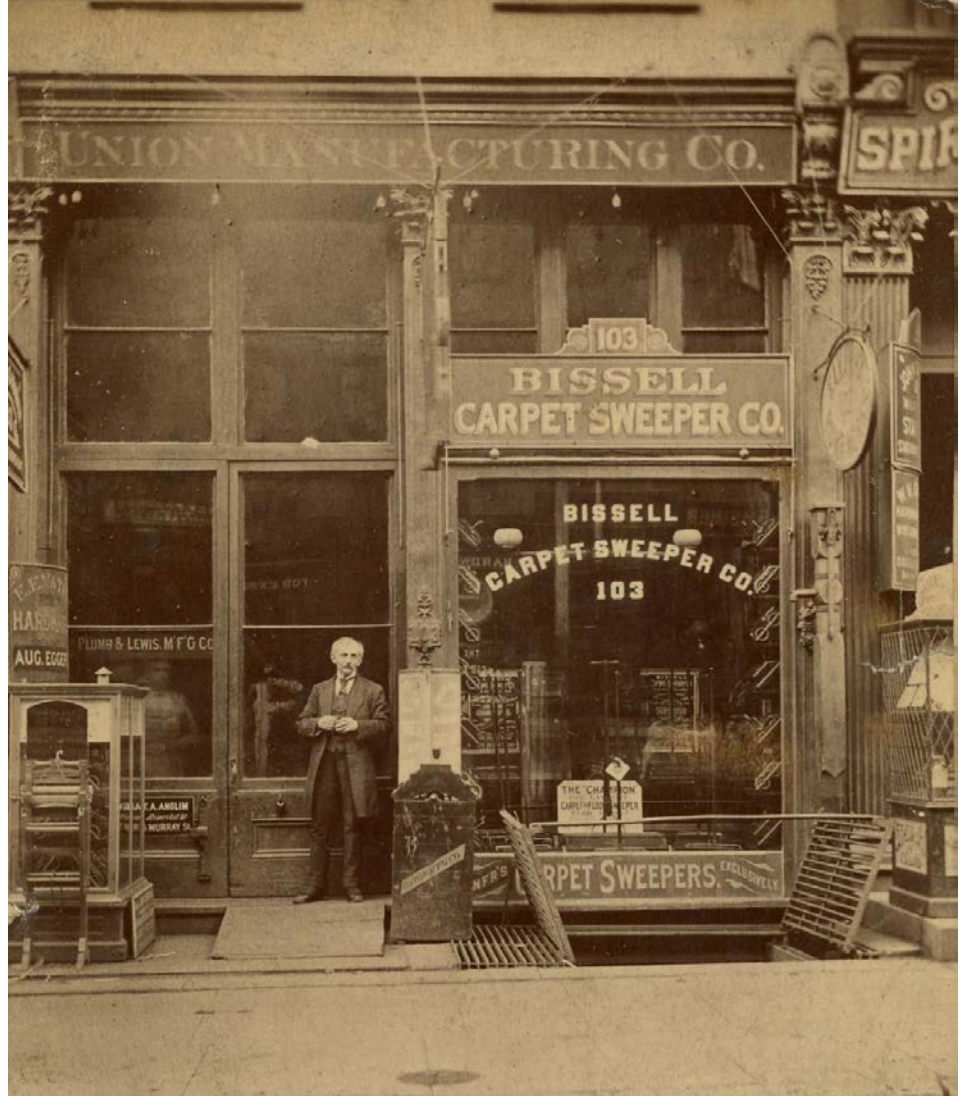
Anna was apparently a trustworthy individual. After the fire destroyed their plant, she and Melville needed to keep operations going. Anna was in charge of seeking loans from the local banks after the business suffered \$150,000 in losses. According to the Greater Grand Rapids Women’s History Council, “On only her handshake and a good name, she secured funding that enabled production to begin again within 20 days of the fire.”

Sweeping the World

In 1889, Anna’s husband Melville passed away from pneumonia at the age of 45, leaving Anna to care for the burgeoning business and their four children. (Anna was a mother of five, but one of her children died young.)

Always a philanthropist, she made it a point to volunteer in her community, even immediately after her husband’s passing. It helped her to focus on something else and give to people who were “more unhappy” than she was.

Soon after Melville’s death, Anna took over the Bissell Carpet Sweeper Company, which sold sweepers with whimsical



Early Bissell Carpet Sweeping Co. storefront.

Grand Rapids Public Museum

names like “Queen,” “Mystic,” “Defiance,” “Superior” and “Prize.”

When Anna was promoted to the role of president, it was a fairly seamless transition. She had been involved in nearly every part of the business with her husband from day one, just as they had been equally involved in their early crockery business. In fact, it was said that Anna “studied business the way other women studied French.”

In an 1899 *Woman’s Journal* interview, Anna was asked how she was able to manage such a large business. She modestly gave credit to her employees. “I have good men around me, most of whom have been in the business from 10 to 20 years. When a man gets into Bissell’s factory, he is regarded as having secured a place for life, if he does his work well.”

Despite her remarks crediting the men of the factories, Bissell also gave opportunities to women. One article placed at least 50 women working on the brushes in the 1890s.

Anna’s official title was president from 1889 to 1919, and she was the top executive. It would not be until the 20th century that professionals would don the title of chief executive officer, or CEO. But in every right, Anna is considered to be the first CEO in practice, since she sat at the top of the organization’s leadership chart. In 1919, she stepped down as president, but she continued to serve as chairman of the board until 1934.

An article from 1900 acknowledges that Anna “took no small part in the earlier development of the business” and was “probably the only woman in the world occupying the position of manager of an institution of this character and of such importance. She gives her entire attention to the business and has handled the affairs of the company with eminent success.”

Anna “championed the business, aggressively marketing the sweeper and organizing assembly and production,” the Bissell website states today. Plus, she was



Above: Bissell sweeper display in the Palace of Manufactures at the 1904 World's Fair.
 Right: One of Anna Sutherland Bissell's marketing ideas was the 7.5-inch toy sweeper, called the "Little Gem." Designed for "Mother's Little Helpers," they were distributed to delegates of the local suffrage convention in Grand Rapids, MI.

"extremely progressive with her employee pension plans and worker's compensation." She reportedly introduced these benefits to workers before they were common practice.

Sally Bjork, former project curator of the Bissell Collection, said during a 1991 speech about Anna at the Grand Rapids Public Museum, "She understood people and treated her employees with respect and fairness." In the 1890s, Anna added paid vacations and pensions for her workers. According to Bjork, this, in addition to their existing accident and sick leave policy, "placed the Bissell Carpet Sweeper Company on the forefront of labor relations at the turn of the century." And during the depression of 1893, Anna was forced to cut hours, but she refused to lay off any of her employees.

Anna led through good times, too. Through it all, she was responsible for making the carpet sweeper business an international success. One way in which she did that was through elaborate displays at world's fairs and exhibitions. The Bissell sweeper received gold medals at the 1889 Paris Exposition, the 1900 Paris Exposition, the Pan-American Exposition in Buffalo in 1901 and the Japanese Exposition in Osaka in 1903. It was awarded a grand prize at the Louisiana-Purchase Exposition in St. Louis in 1904.

During her tenure, Anna expanded operations beyond the United States, with factories in Toronto and Paris and a warehouse and office in London.



Thanks to Anna's business savvy, Bissell's business made up 85% of the carpet sweeper trade and 98% of the toy sweeper trade at the turn of the century, according to the *Grand Rapids Herald*. The company occupied 158,708 square feet of space, complete with a steam power plant and an independent electric light and power plant.

Being the marketing maven that Anna was, under her leadership, the company distributed 7.5-inch toy sweepers called the

“Little Gem” or “Little Jewel,” designed for “Mother’s Little Helpers.” The company wisely gave toy sweepers to delegates of the national suffrage convention in Grand Rapids, according to the same news report.

Relying on the bristles of 10 million hogs per year, the company manufactured 7,000 sweepers per day—3,000 of its regular size and 4,000 of its toy size. That was nearly 2.2 million sweepers per year.

Bissell’s clever and aggressive advertisements from that period were largely targeted to women, particularly housewives, telling them how they could save time and energy by choosing Bissell sweepers.

Inside the company, Anna’s leadership was described as follows in a 1904 article

in the *Michigan Artisan*: “She takes a deep interest, constantly keeping in close touch with the business, and by her kindly ways and sincere consideration for all her employees, inspires results that, without such influence, could hardly be achieved.”

Anna was instrumental in protecting the company’s patents and trademarks. In 1896, for instance, the Bissell Company sued an Indiana-based company called Goshen Sweepers for infringing on its patents, and their lawsuit was successful.

Although Anna herself was not the one litigating, the fact that she directed her employees and lawyers to engage in legal action was something ahead of her time, says Jo Ellyn Clarey, past president of the Greater Grand Rapids Women’s History Council. It was extremely unusual in those days to see a woman in the courtroom or engaging in litigation, she says. The decision in *Bissell v. Goshen* was “one of more than ordinary importance,” one news publication said at the time.

Bissell’s current CEO, Mark Bissell, says that even today Anna’s name comes up in conversations in the workplace at least every week or two—usually in the dialogue around culture. “We talk a lot about our core values and ascribe them to Anna,” he said, explaining that although it doesn’t appear that Anna had a set of codified values for the business written down anywhere, her priorities were well known and have been passed down over the generations.

At home, Anna lived with her family in a three-story brick home with oak floors, a gas heater, seven fireplaces, six baths and a large garage. While she accumulated wealth and was very well traveled, Anna was always passionate about giving to the needy. Her largest contribution was to sponsor the Bissell House, a recreation and training program for youth and immigrant women in Grand Rapids. She also served on the board of what would become the Blodgett Home for Children, and she became one of the first women to serve on the board for the First Methodist Church.

A Legacy

On November 8, 1934, Anna Sutherland Bissell passed away at the age of 87. She was buried at Oakhill Cemetery in Grand Rapids, alongside her husband and children. All of her pallbearers worked for the Bissell Company, underscoring how close she was with her workers.

Anna is known as the first female CEO in the United States and the first female elected to the National Men’s Hardware Association (for years, she was its sole female member). In the town of Grand Rapids, she is well known as a formidable leader who valued her employees and treated them like family.

Today, at the Bissell headquarters in Grand Rapids, on a company timeline that wraps the halls of the building, is a tribute to Anna—recognizing her contributions to the company.

On Anna’s 30th birthday, her daughter Matie called her “the very beautifulest lady in all the land,” which visitors to Grand Rapids can see for themselves. In 2016, Anna was honored with a seven-foot statue built in her likeness, as part of the Grand Rapids Community Legends Project. It stands outside of DeVos Place in downtown Grand Rapids near the site of Bissell’s original factory.

Anna’s statue was unveiled the same year as the company’s 140th anniversary. Mark Bissell said at the time: “I think Anna would be proud knowing that her company is flourishing, is a leader in its industry and still operates with passion and the highest level of integrity. Her legacy was not rested upon. It has been built upon and has never been taken for granted.” 💰

Stephanie Forshee is the finance editor at LinkedIn News, and her byline has appeared in The Wall Street Journal, Morning Brew, Forbes.com, the Financial Times, Newsday, Backstage, and other media outlets. She is also the creator of Hidden Gems for Kids, a children’s book series about forgotten women in business. Her first children’s book, Hidden Gems: Margaret Getchell LaForge, was published by Archway Publishing in 2023. Hidden Gems: Maggie Lena Walker, co-authored with Amanda Gerut, will be available this spring.

This seven-foot statue of Anna Sutherland Bissell was created as part of the Grand Rapids Community Legends Project. It stands in downtown Grand Rapids near the site of Bissell’s original factory.

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February 27:	Medicare Update
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The BIRTH of the FIXED INCOME ANALYST

By Alfred Mazzorana

PENN CENTRAL CORPORATION's financial collapse in 1970 was the bellwether event that—along with events that followed in its wake—led to an unprecedented demand for corporate bond credit analysis and bond indenture research. This demand emanated from both money managers—predominantly in Boston and Hartford, where the bulk of fixed income securities were managed at the time—as well as the major Wall Street bond trading houses. Out of these developments arose a job category that had not previously existed: the fixed income analyst.

An organization to advance the new profession followed within a few years. In late 1975, during a financially stressed decade, a small group of credit analysts created the Fixed Income Analysts Society Inc. (FIASI) in New York City. The group was seeking an organizational structure from which the then small, but growing, community of bond analysts could discuss fixed income related bond research ideas. The New York Society of Securities Analysts (NYSSA), which had been serving the investment community since 1937, catered to equity analysts. As such, it provided

little in the way of programs tailored to the interests of the bond credit analyst.

FIASI's initial gathering took place in late 1975 at Harry's Restaurant on Hanover Square, New York City. Calls went out to known bond analysts. Approximately 22 credit analysts attended for an evening of casual discussion over drinks and hors d'oeuvres. Before the evening ended, the attendees approved the idea of creating an organization dedicated to bond analysts and agreed to support the organization with annual dues.

The founders used NYSSA's organizational structure as their template for structuring the association. They incorporated FIASI, with H. Russell Fraser serving as the organization's first president.

Pre-1970s: A Period of Corporate Credit Stability

The years following World War II witnessed a remarkable period of corporate credit quality stability. According to Martin Fridson in his 1984 *Bondweek* article titled "The Transformation of Credit Research":

From 1948 to 1965, Standard & Poor's did not alter its rating on any of [that era's] five largest electric utility operating companies, a roster that include[d] Consolidated Edison, Consumers Power, Detroit Edison, Pacific Gas & Electric, and Southern

California Edison. With so little change from one year to the next, it was sufficient for the analyst to examine financial statements that merely reported what had already happened.

The 1970 collapse of the Penn Central Corporation signaled the end of this period of stable corporate credit ratings. Demand for a new approach to corporate bond research germinated and led to the birth of the fixed income analyst profession on Wall Street.

Economic Environment of the 1970s

By the mid-1970s, the easy-money policies the Federal Reserve initiated during the 1960s—designed to generate full employment, coupled with increased funding for the Vietnam War (1967–72)—contributed to a period of unprecedented price inflation. The stage was set for a period of stressful events in the US financial markets. By 1975–78, the US economy was experiencing a period of stagnating corporate earnings coupled with a high rate of inflation, known as "stagflation." The corporate bond market was in a state of collapse.

Beginning in late 1979 and continuing through 1985, the Federal Reserve, under new leadership, reversed its prior policies. Paul Volcker's Fed hiked interest rates to double-digit levels in an effort to stem the high inflation rate of the

H. Russell Fraser, founding president of the Fixed Income Analysts Society Inc. (FIASI), photographed in 1990.

prior decade. These policy changes had a profound effect on the market for fixed income securities. US government debt issuance was squeezing investment grade corporate debt out of the market. This combination of hyperinflation and government competition for investor dollars led to unprecedented high interest rates. Double-digit-coupon bonds, for both government and investment-grade corporate debt, became the norm.

Analysts' Expanded Role

By the mid-1970s, corporate bond research on Wall Street had evolved into three distinct but interrelated areas: Credit, Indenture and Quantitative.

1. Credit Research

The collapse of corporate credit quality during the 1970s was the underlying impetus leading to an unprecedented demand for better and more predictive corporate bond credit rating research. The staid credit quality environment of the post-war years had ended. The utilization of basic corporate ratio analysis was not answering the call for ascertaining credit quality direction. The “new” community of credit analysts were now digging deeper into the corporate financial statements. Some Generally Accepted Accounting Principles (GAAP) financial reporting concepts, such as Construction Work in Progress (CWIP), came into question. Net Income now had to reflect “real” net income, not GAAP net income.¹

2. Corporate Bond Indenture (Covenant) Research

During the 1970s, insurance companies were large active buyers of high-coupon electric utility bonds. They used them to collateralize and cash fund their long-duration annuity contracts which, in turn, they sold to investors. This arrangement exposed the insurers to the risk that the issuer would escape the burden of extremely costly debt through a surprise early redemption of the underlying bond collateral. Such gambits, exploiting previously obscure provisions in the bonds' indentures, were highly costly to the issuer of the annuity. The risk of such events set the stage for an unprecedented demand for in-depth bond indenture research and analysis as a natural extension of the bond credit analyst's function.

The 1970s: A Turbulent Decade

The Penn Central Debacle: After declaring bankruptcy in June 1970, the Penn Central Corporation was reorganized under Section 77 of the Bankruptcy Act of 1933, which had been written specifically for the railroads. To the surprise and dismay of bond holders, the corporation would not be liquidated. Its assets would not be sold off to satisfy creditor claims, as might be the case under ordinary bankruptcies. The loan indentures on its equipment bonds would be suspended. The line would continue to operate under the direction of the courts, which would function as a “receiver” in an effort to maintain services. Nevertheless, the net effect throughout the already fragile railroad industry forced many of the other northeastern railroads into insolvency—among them the Erie Lackawanna, Boston and Maine, the Central Railroad of New Jersey, the Reading Company and the Lehigh Valley. This led to President Richard Nixon creating AMTRAK.

Collapse of the Bretton Woods Agreement: On August 15, 1971, President Nixon terminated convertibility of the US dollar to gold, effectively bringing the Bretton Woods system to an end. This action, initiated unilaterally by the President under an executive order without consultation with either the International Monetary Fund (IMF) or the State Department, devalued the dollar 10%, stoked inflation and shocked world markets. Major world economies, Japan and the EEC followed suit by floating their exchange rates.

Stock Market Crash of 1973-74: The OPEC oil embargo, combined with the collapse of the Bretton Woods Agreement and the well-publicized cash flow problems of the electric utility industry, contributed to the stock market crash of 1973–74.

Franklin National Bank Failure: Corporate failures spread from the railroads to financial institutions and municipal government. On October 8, 1974, the Franklin National Bank failed. At the time, it was the largest bank failure in US history.

NYC Bankruptcy: On October 17, 1975, Weil, Gotshal & Manges filed the papers for New York City's bankruptcy. The city's teachers' union bailed out the city with a purchase of \$150 million of New York City bonds. The Municipal Assistance Corporation followed with its MAC bonds.

Duke Power Company: The Duke Power Company, a highly regarded AAA rated credit, required an unprecedented 12% coupon in order to sell its 1977 bond deal, a clear indication that the bond market was in trouble. Eventually, electric utility new-issue bond yields topped out at 18% (Philadelphia Electric) before declining back to single digits.

First Multifund Corporation: In 1978, First Multifund Corporation became the first money market fund to “break the buck” and reset at \$.94 on the dollar.

Airline Bankruptcies: Government deregulation of the airline industry added to investor uncertainty and led to mergers, employee layoffs and, eventually, bankruptcy filings by the major carriers.

From 1975–77, Paine, Webber, Jackson & Curtis, Inc.'s bond research group pioneered bond indenture research. A heretofore dormant covenant requirement embedded in electric and gas utility company bond indentures, known as the Maintenance & Replacement (M&R)

provision, along with the Funnel Sinking Fund were “re-discovered” and thoroughly researched.

The M&R provision, embedded in the original electric utility mortgage indentures written in the mid-1930s, was originally intended to assure bond holders

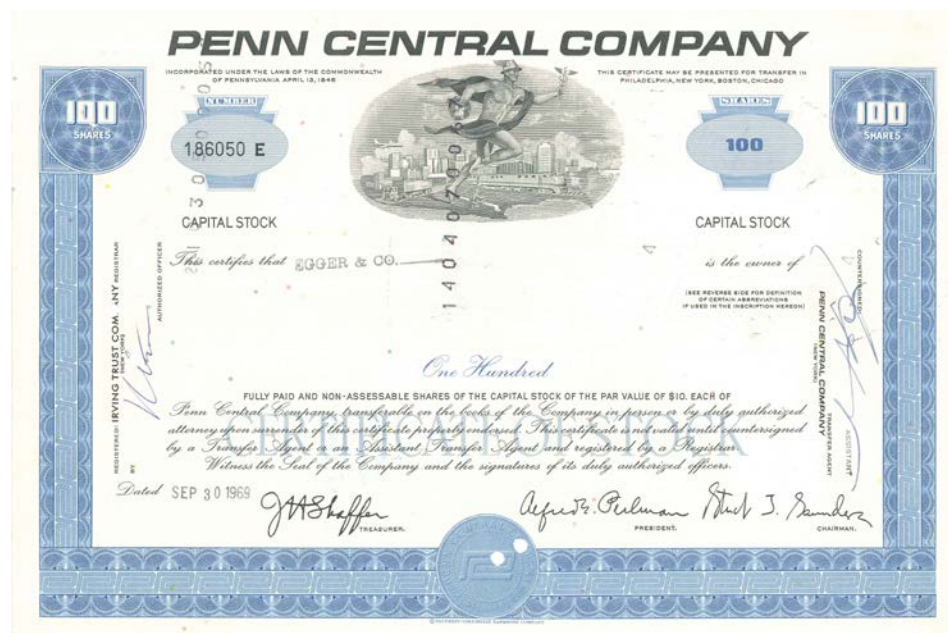
of proper “maintenance” and timely “replacement” of the assets collateralizing their outstanding first lien bonds. The annual M&R covenant required the utility to set aside each year additional assets equal to 2.5% of revenues. If those conditions were not met, however, the covenant required the utility to retire debt. Ironically, the Arab oil embargo of 1974 and the concurrent 400% increase in oil prices, which drove up electric utility revenues, necessitated an unprecedented increase in the amount of assets required under the first lien mortgage to maintain the collateral-to-bond asset test. To satisfy the M&R provision, management had to decide whether to provide more collateral, if available, or call-in bonds to adjust for the asset-to-debt deficiency.

But while the M&R covenant gave the issuer the ability to exercise an early call at par on a bond that had been trading at a large premium, it also created a potential impediment to the utility’s ability to continue to issue lower-cost first mortgage bonds to fund capital projects. Lacking availability of first-mortgageable property left the utility with having to resort to lower-rated, higher-cost “second mortgage” bonds. Bond credit ratings thus came under pressure due to the restrictive M&R covenant.

This problem was acute for electric utility companies with nuclear plant construction projects. Electric utility indentures, post-oil embargo, needed modification. The Wall Street bond credit analyst was now being consulted and provided indenture modification advice directly to Gulf States Utilities, Texas Electric, Consumers Power Company and others as the need for indenture modifications spread within the electric utility industry.

Sinking fund covenants embedded in bond indentures were intended to provide a systematic retirement of the issuer’s outstanding bonds. The provision, originally designed for bondholder protection, evolved into a *funnel* sinker providing the issuing corporation the option of funneling its entire annual sinking fund requirement into the retirement of one specific, high-coupon bond at par, as opposed to a weighted selection of its high and low coupon issues.

Indenture analysis, heretofore the bailiwick of corporate lawyers at sedentary law firms that wrote the actual doctrines, crossed over to and blossomed into an



Penn Central share certificate, dated September 30, 1969. The railroad’s financial collapse in 1970 was the bellwether event that led to an unprecedented demand for corporate bond credit analysis and bond indenture research.

extension of the Wall Street bond credit analyst’s profession. Given their daily proximity to bond trading desks, coupled with their newfound knowledge of the covenants, Wall Street bond credit analysts became adept at quantifying the potential negative impact of a company’s covenants on its bonds’ credit rating and, ultimately, their market price trading levels.

The credit analyst’s extension into indenture research contributed to the development of early bond redemption optimization modeling as well. The “quant” analyst had to be familiar with *all* the call provisions embedded in the bond’s indenture. Covenants varied greatly from issuer to issuer and even within a single issuer’s outstanding issues.² The analysis was complex, but the need for indenture expertise was great. The demand for a new breed of corporate bond credit analyst was expanding.

3. Quantitative Research

The surge of interest rates to double-digit levels created new opportunities for those who understood the complex market price dynamics of deep-discount and high-coupon bonds. Sidney Homer and Martin Leibowitz’s groundbreaking 1972 book, *Inside the Yield Book*, became required reading for budding students of bond research. No longer were bonds boring investments. Homer and Leibowitz showed that the compounding effect

of double-digit coupons on a bond’s total rate of return is profound. Mastery of the metrics of bond duration and convexity, as well as refunding analysis, escalated in importance.

Avoiding the risks associated with early redemption of high-coupon bonds required a portfolio manager’s acute understanding of early debt refunding risks—risks that were embedded in the bond indentures, but heretofore dormant. The latter required both specialized quantitative modeling analysis and bond indenture knowledge. During the early 1970s, optimization bond refunding analysis utilizing quantitative option-adjusted spread techniques was pioneered by quantitative bond analysts at AT&T Corporation; it later moved to Dillon, Read & Co.’s bond research group.

Beyond the 1980s: New Challenges

In the 1980s, credit analysts faced new challenges from what became known as “event risk.” Corporate bond ratings, that previously changed gradually, were now subject to radical transformation within short periods. For example, Manville Corporation, rated investment grade A2 at the end of 1981, filed for bankruptcy the following year under the weight of massive asbestos-related liabilities.

Along with environmental shocks, such as the Bhopal chemical accident in 1984,



President Richard Nixon, photographed at an outdoor press conference in 1971. That year, President Nixon terminated convertibility of the US dollar to gold, effectively bringing the Bretton Woods system to an end. This was one of the events of the turbulent 1970s that led to the birth of the fixed income analyst.

event risk arose from leveraged buyouts (LBOs). These transactions, formerly limited to private companies, grew in scale and began to occur at public companies in the 1980s. Instead of dropping by one notch—from, say, Aa2/AA to Aa3/AA—ratings often fell by two or more entire letter grades at a time (A to BB, for example) as debt replaced a large portion of the equity on the balance sheet.

Concurrently, the market for publicly rated speculative grade (high yield) bonds expanded greatly. For these issuers, default was a much less remote possibility than for investment grade (Baa3/BBB- or higher) companies. That made skilled credit analysts more valuable than ever to institutional investors and the Wall Street firms that served them.

In this altered environment, top credit ratings were widely disdained as a sign that the company was underleveraged, to the detriment of shareholders' return on equity. Therefore, even companies that remained within the investment grade category migrated, with management approval, toward lower ratings, thereby requiring more intensive monitoring by credit analysts.

The late 1980s brought innovations in securitization, such as collateralized bond obligations (CBOs) and collateralized loan obligations (CLOs). These, like the mortgage-backed securities that preceded them, necessitated new analytical

methods. A vast trading market for leveraged loans emerged. Credit default swaps (CDS) were introduced in the early 1990s and became a prominent part of the financial landscape in the following decade.

Economic turbulence continued to create hazards and opportunities in subsequent years. Mortgage-backed securities were central to the financial crisis that triggered the Great Recession of 2008–09. Detailed analysis of the mortgage pools in these instruments enabled some investors to reap huge gains through short-selling before the market blew up. On the corporate bond side, the Great Recession culminated in 2009 with the largest number of defaults since the Great Depression year of 1933.

As recently as 2023, optimization refunding analysis was again cited as an analytical tool in conjunction with the technique of advanced refunding of municipal debt with the utilization of taxable debt.

What the Future Holds

Beginning in 2021, inflation once again reached historic highs and the Federal Reserve, beginning in 2022, within a compressed period of time raised interest rates at an historic rate. As expected, the yield curve turned sharply inverse and bank failures followed, creating increased interest once again for credit and quantitative

bond research. A new element in bond research that FIASI will be called on to address is the effects, both positive and negative, that AI will be introducing into the bond research world going forward. **\$**

Alfred Mazzorana began his fixed income analyst career on Wall Street in 1973. He is a founding member of FIASI and served as its first treasurer and later president. Now retired, he is an active philanthropist and lives with his wife in Delaware and Vermont.

Special thanks to FIASI member and MoAF trustee Martin Fridson for his assistance with this article.

Notes

1. The utility industry's utilization of the GAAP revenue item known as "Construction Work in Progress" allowed the recording of a current expense (i.e., nuclear plant expenditures) as revenue; these revenues were not expected to be recovered from rate payers for many years into the future. Credit analysts removed this "phantom" implied revenue from their bond interest coverage ratios, adding to downward credit rating pressure.
2. Long Island Lighting Co. had both a first mortgage indenture and a general and refunding mortgage (second mortgage), both of which incorporated a long list of "supplemental" covenants related to each bond issued.

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AN INVESTMENT BANKER LIGHTS THE WORLD

Edward Dean Adams
and the Engineers
Harness Niagara Falls



By Daniel C. Munson

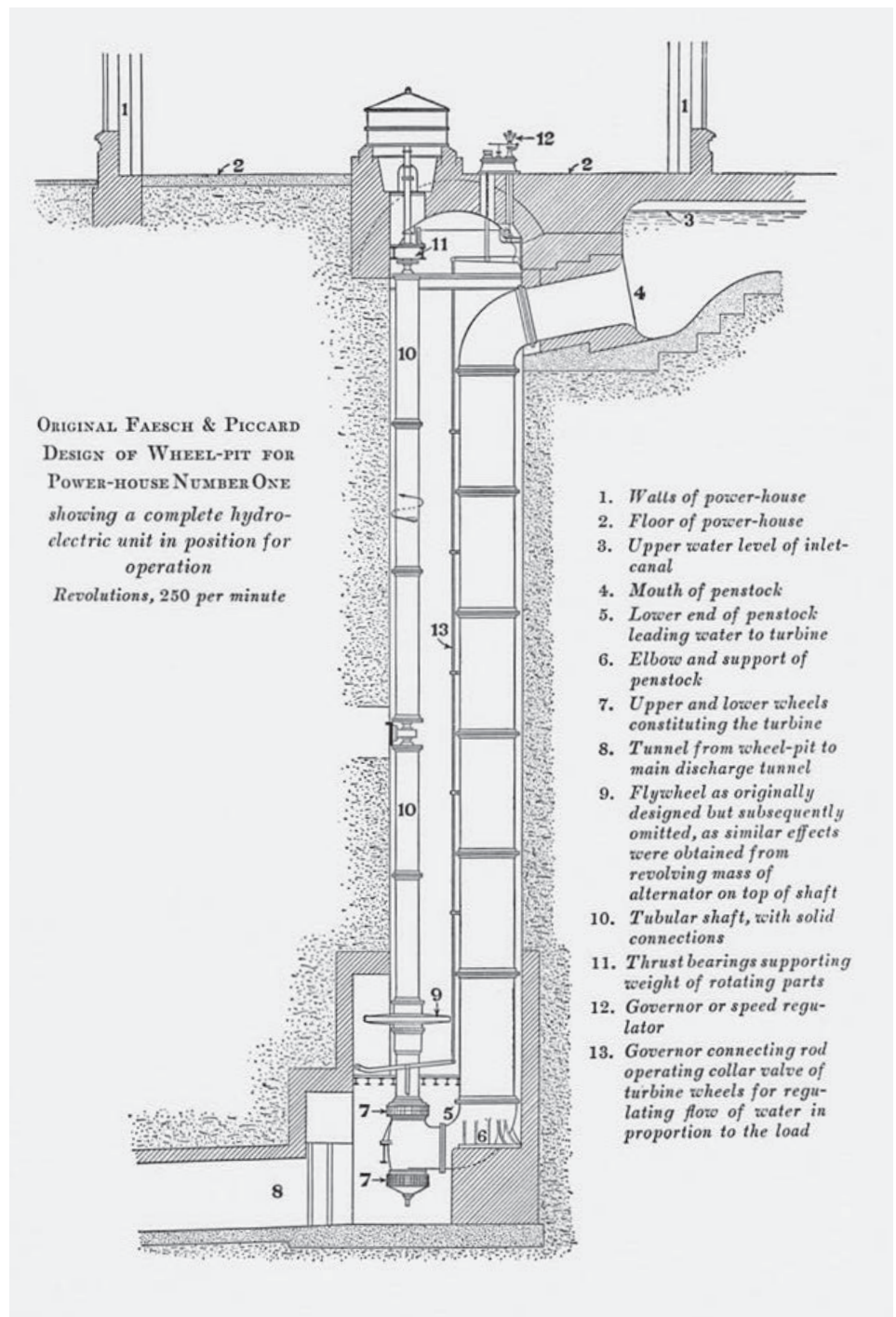
INVESTMENT BANKING is often thought of today as the simple raising of money through the issuance and marketing of securities. In the 19th and early 20th centuries, however, when managerial and engineering expertise were scarce resources, competent investment banking sometimes required organizing the technical and industrial effort involved.

J.P. Morgan, Sr. understood this. Morgan was the most important investment banker of his time, and many new ideas for industrial development crossed his desk. He knew from dint of experience that what separated good ideas from bad was not his assessment of the technology—he would have been the first to admit he was not a technologist—but the managerial and engineering competence of the people organizing the technical effort.

One such idea was the large-scale generation and transmission of power using natural water flow. The idea was compelling for New Yorkers: Niagara Falls, one of the world's largest waterfalls, was located at the western edge of the state, and the potential energy released as the water cascaded downward was massive. "As a site for the development of water-power," wrote one promoter, "the falls of Niagara stand without rival in all the world" and occupy "a truly strategic position upon one of the great trade routes of the continent."

Morgan was optimistic about the general idea—since the 1880s he and his fellow residents of lower Manhattan had been using electric lights powered by coal-fired steam turbines at the nearby Pearl Street Power Station—but the nearest large city to Niagara Falls was Buffalo some 25 miles away, and the technical problems surrounding longer-range power transmission were filled with uncertainties.

One of these ideas for harnessing and transmitting the hydro power at Niagara



Niagara Falls Power Company wheel pit design drawing for power house #1.

Falls was pitched to Morgan in the late 1880s. The prominent financier was enthusiastic, but monetarily non-committal. When asked about the source of his reticence, Morgan said, "Your scheme is all right but you have no man to run it."

"Whom would you suggest?" asked the ardent promoter.

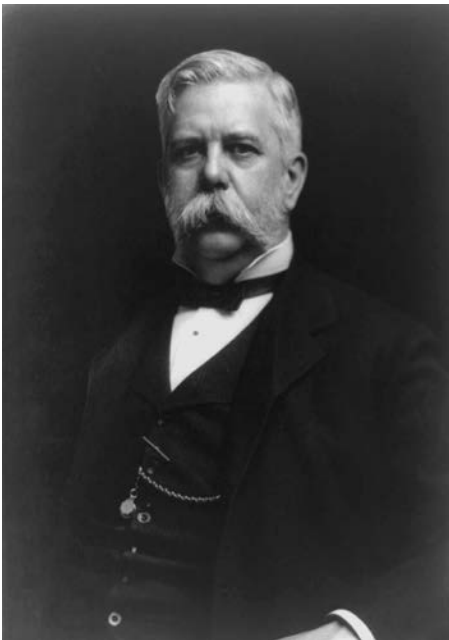
"Well, there is Adams. If you can get him, I'll join you."

Edward Dean Adams was a small,

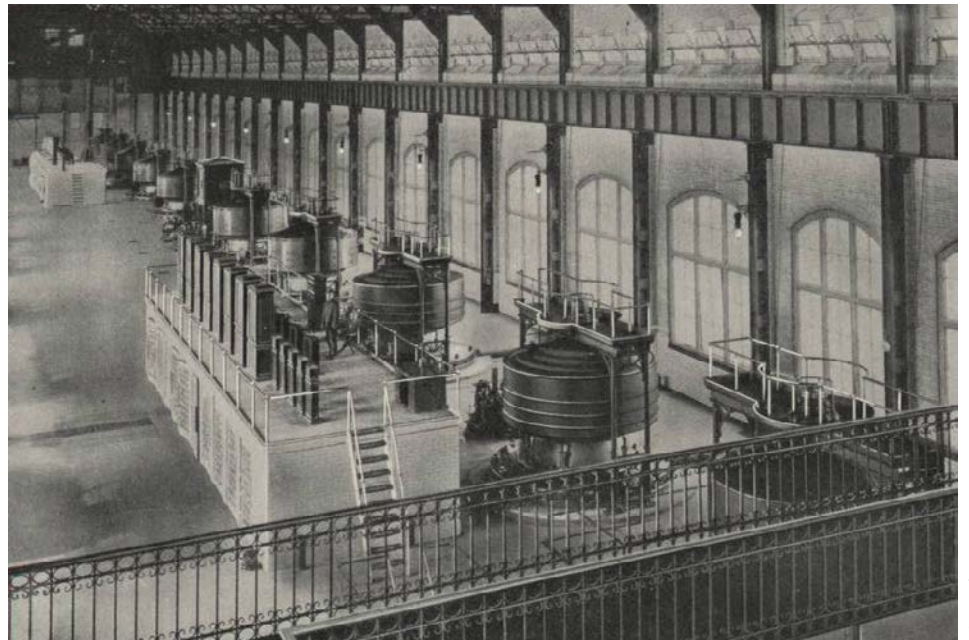
meticulous and cultured man working as an attorney and banker on Wall Street. A distant relative of two American presidents, Adams was unusual among Wall Streeters of the time in that he was an MIT-educated technologist, a practical and pragmatic man "who knew how to make things happen and get things done." Years later, *Time* magazine described Adams' reputation at the time in this way: "...he had already established among the

Left: Painting of Niagara Falls, 1899.

Inset: Portrait of attorney and banker Edward Dean Adams, who J.P. Morgan brought in to run the project of harnessing electrical power from Niagara Falls.



Portrait of entrepreneur and engineer George Westinghouse, circa 1906.



1904 photograph of the 5,000 horsepower Westinghouse generators at the Edward Dean Adams Power Plant in Niagara Falls. This was the first large-scale, alternating current electric generating plant in the world, built in 1895.

more flamboyant New Yorkers a quiet reputation as a thorough investigator and sound organizer of the projects into which men put money.” Such a man was known to Morgan through Morgan’s many railroad reorganizations, and such a man could be expected to make things happen and get things done—i.e., “to run it.”

The promoters approached Adams, and he agreed to a six-month contract to “see what could be done.” He consulted mechanical engineers, including a man he would depend on for the project, Dr. Coleman Sellers of Philadelphia. Adams also cabled Thomas Edison, who at the time was in Paris: “Has power transmission reached such development that in your judgment scheme practicable?” he asked the world-famous Edison.

Edison replied: “No difficulty transferring unlimited power. Will assist.”

A company was organized, the Cataract Construction Company, in early 1890. Adams was put in charge of it, and when news of this got around, the company was quickly capitalized at the then lavish sum of \$2.63 million.

The core mechanical principle was compelling and thoroughly understood. By diverting the river flow from a point above the falls and channeling the flow downwards using large diameter pipes—called “penstocks”—the tremendous hydrostatic pressure unleashed at the bottom of the vertical column of water could be used to

spin turbines. The motion of those turbines would then spin long vertical shafts that could be used to generate power.

The work to channel the flow was daunting and began before the question of precisely how to use the energy of the spinning turbines was fully answered. The work was brutal: dynamiting and excavating a tunnel first alongside, then downward some 150 feet through bedrock near the falls, then sloping down gradually through a more than one-mile long tunnel (the “tailrace tunnel”) to an exit (the “tunnel portal”) that channeled the water back into the Niagara River downstream of the falls. More than 1,300 men worked day and night in blasting and excavating 600,000 tons of rock; 28 of them would die in the process.

The central technical issue to be resolved was the transmission of the power generated. To merely send power to the 2,500 people in the nearby town of Niagara would not justify the tremendous expense. The challenge was to transmit the power to the 250,000 people in the bustling port city of Buffalo.

The uncertainties led to fractious technical disputes. George Westinghouse, known now as one of engineering’s towering figures, was so skeptical in 1890 of the idea of long-distance electricity transmission that he originally suggested using compressed air to transmit the power to Buffalo. (Mr. Westinghouse, it may be

recalled, had invented the railroad air brake.) “Today it is almost impossible,” Adams wrote years later of the technical uncertainties, “to realize the situation at the earlier date [i.e., in 1890].”

Technology, however, was moving fast. Long-distance transmission using alternating electric current (AC) was demonstrated in 1891 in Germany over a 100-mile span, with a power loss of less than 25%. That same year, at the Gold King Mine in Colorado, Westinghouse engineers sent AC current thousands of feet above the waterwheel hydro power source to energize a Nikola Tesla-designed AC-motor near the mine to drive a stamp mill. It was proof-of-concept, but the power transmitted was modest.

Vexing details remained in the translation of Niagara’s spinning turbine power into electricity. A professor from Scotland was brought over to design a few critical parts of the translating system, but the Westinghouse engineers found his low frequency design completely unworkable. It was left to Adams, using the skills he had developed in getting railroad managers and financiers to cooperate, to work out a technical compromise.

Much has been written about these technical details; it is a pivotal point in the history of electrical engineering. The contestants were some of the titans of technological history: Thomas Edison and General Electric on one side of the debate, and



View of the Edward Dean Adams Power Plant at Niagara Falls, taken from the southeast.

Nikola Tesla and the Westinghouse Corp. on the other. These matters boiled down to a question of whether to use alternating or direct current—AC vs. DC—to transmit power to Buffalo. Adams was in the middle of this technical tussle, and he would make the final decision.

These matters, while interesting, can easily distract from an equally important but largely forgotten story. This issue, one that occupied Adams just as much as the technical matter, was how to arrange the financing of the project in such a way that the company would generate cash flows sufficient to produce a return on the capital raised. Adams knew as well as anyone that for all of Edison's technical successes, his companies in the 1880s were routinely in financial difficulty as they struggled to cover their development costs.

The financial issue weighed on the technical issue. Tesla wrote to Adams during the critical decision year of 1893 that “what my [AC] system has offered was to do away with the commutator and brushes in the generator and the motor... This renders the system simpler.” Tesla went on to critique the idea of DC power, asserting, “The power you would furnish with such machines would be unavailable for many uses, for instance, electric lighting.” This little passage, added towards the end of a long letter, may have caught Adams' attention, because lighting was the feature that would induce the citizens of Buffalo to willingly pay the utility bills that would allow the project to work financially.

The water flow to be diverted and the vertical drop through the penstocks and turbines created potential power that was

a quantum leap above that produced by the power stations then in operation—and all without the noxious coal smoke associated with conventional steam power. Ten huge 5,000-horsepower generators were planned for Niagara, potential electrical power far greater than any other single power plant in the United States. Westinghouse commented that the size of the generators was “far beyond all precedent” and as such that “nearly every device used differs from what has hitherto been our standard practice.”

The uses to be made of such power by the citizens of Buffalo were potentially vast, but the price the citizens would be willing to pay was uncertain and would undoubtedly be politically contentious. The Cataract Company therefore directed some of their capital to the purchase of some 1,500



The Niagara Falls Power Houses, circa 1900.

Library of Congress

acres of land near the falls for an industrial park, promising any interested industrialists access to cheap electrical power.

The Cataract Company was building a potentially better mousetrap, or at least a bigger mousetrap, and the world indeed “beat a path to their door.” The embryonic industry of producing aluminum from bauxite required large amounts of electrical power—aluminum is sometimes described as “congealed electricity”—and the ambitious people in Pittsburgh running what would become the Alcoa Corp. contacted Adams with a plan to place a factory right in Niagara and the request for all the electrical power Adams and his Cataract Company could provide. The manufacture of “carborundum” (silicon carbide)—a mineral used for cutting tools, abrasives and gem polishing—required electrical furnaces capable of producing 4,000 degree (F) temperatures, and the Carborundum Company of Monongahela, Pennsylvania was eager to move operations to Niagara to access this abundant electrical power source.

The fortuitous nature of these parallel developments was not lost on Adams. “How often it happens,” he wrote years later, “that two movements, unknown to each other and widely separated...plod

along slowly...until they seemingly just happen to meet at the exact moment when each needs the aid of the other!”

Paying customers willing to set up operations near the falls and for whom the electric power was well worth the price reduced some of the project’s dependence on the technical uncertainty of long-distance power transmission to Buffalo. When the first of the turbines was set spinning in mid-summer 1895, it was Alcoa and the Carborundum Company that began receiving power.

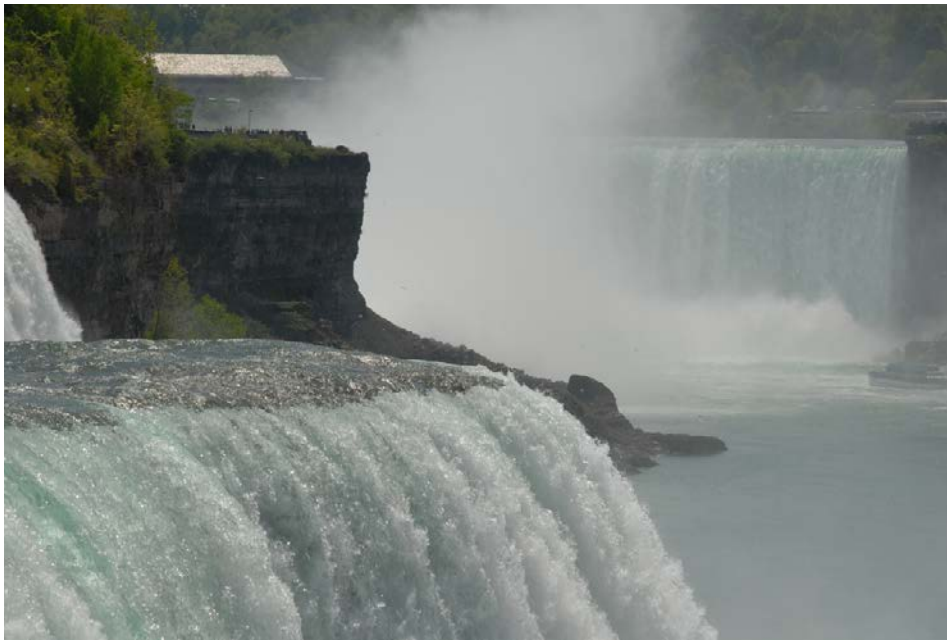
The way in which the profits gushing from new technologies can grease the financial gears to hasten broader societal change is a recurring theme in financial history. For instance, the lucrative spice trade stimulated a good deal of ship building in Elizabethan England, later permitting a group of religious separatists without much money to charter a couple of older merchant vessels, the *Mayflower* and the *Speedwell*, for a pilgrimage to the New World. (The British East India Company passed on using the *Mayflower* years earlier.) Similarly, the discovery of gold in 1849 a few dozen miles from Sacramento led a few years later to the lavish capitalizing of a railroad, the Sacramento Valley Railroad, whose sole purpose was to ship

gold and supplies between the mines in the foothills of the Sierra Nevada range and Sacramento. Fifteen years later, that line served as the western terminus of the Transcontinental Railroad.

The turbines were spinning and aluminum and carborundum production was proceeding, while the city of Buffalo wrestled with how to organize and regulate the proposed electrical utility. Buffalo’s Common Council, later its Board of Public Works, could not agree on issues like the right to revoke terms and rates and whether they should have the power to mandate the burying of the wires underground. These questions, while important, weighed on the financials of the project, where the timing of the cash flow is most important.

The project’s capitalization was significant: additional offerings brought the total to roughly \$6 million when the more than 25 miles of transmission lines sending alternating current to Buffalo were completed and transformers were in place. Power was first sent to Buffalo in the early minutes of November 16, 1896, and immediately began powering the city’s streetcars—ironically, only after being transformed to direct current.

Eight weeks later, Buffalo’s burghers decided to celebrate. They packed the top



View of Niagara Falls with the Adams Power Plant transformer house in the distance.

floor dining room of the 10-story Ellicott Square Building for a banquet—an electrically lit banquet—organized by the Cataract Power and Conduit Company. Adams and the capitalists traveled from New York City along with the world-renowned Tesla in a private railcar, and they visited the powerhouse on the way to the banquet. Tesla was to be the keynote speaker, but New York moneyman Francis Stetson spoke first and took some of the air out of what was to be a festive evening by complaining about his company’s lack, as of that date, of profits. He and his fellow investors, he lectured, had shelled out over \$6 million to build the great power station—he made a point of quoting the precise amount—“without thus far receiving one penny of profits or dividends or interest.”

The audience was in too good a mood to be put out for very long by this self-interested diatribe. Tesla’s speech followed, and he focused instead on the “type of man” responsible for this great engineering feat, one “whose chief aim and enjoyment is the acquisition and spread of knowledge, men who look far above earthly things, whose banner is Excelsior!”

The crowd roared. Buffalo’s citizens were proud of their city’s new and growing power grid. It had started modestly, but it would escalate rapidly: by May 1900, all 10 turbines connected to power house #1 were spinning and generating 50,000 horsepower (37 million watts).

Buffalo’s merchants were so enchanted by the illumination of their business district that they financed an exposition—a “World’s Fair”—in 1901 that would highlight this new electric age. They were intent on outdoing the Chicago World’s Fair of 1893, the one that had first hinted at the tremendous technical capabilities of electricity. And it was a success, although it is known to history now largely as the site of President William McKinley’s assassination in September 1901.

The technical achievement of those Niagara engineers and workmen is easily forgotten. (A large 1950s era dam project increased power generation at the site and left few remnants of their 1890s work.) The pioneering engineers were too busy to spend much time touting or documenting their Niagara achievement. Their leader, Westinghouse, was famously non-reflective, and Tesla was quickly absorbed with other projects. The electric age had begun, and they were at the vanguard.

One man did not forget. Adams quietly kept the documents and tracked the project’s tremendous influence on the world. In 1927, he produced a beautiful two-volume history of the project, *Niagara Power*, and sent copies to libraries around the country. He compiled statistics showing how influential the Niagara project was on the nation’s total electrical power output: Niagara power initially accounted for a substantial fraction of the total electric

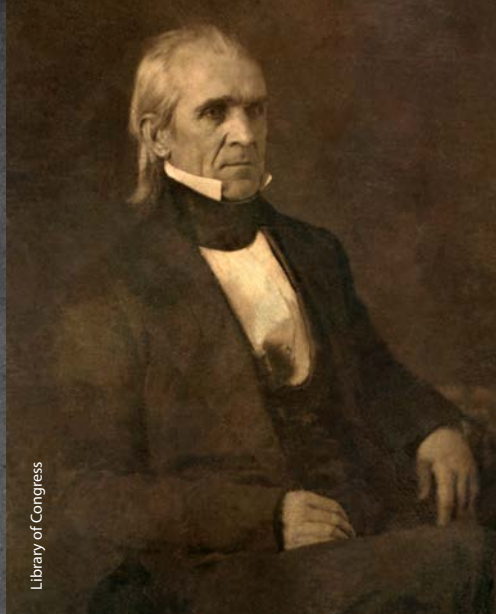
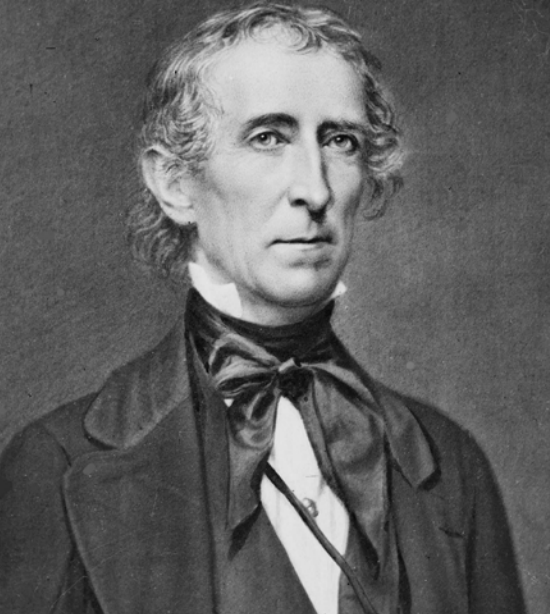
power produced in the country, but by the 1920s long distance AC transmission from coal powered plants had grown so fast that Niagara’s share of the nation’s total electric power generation was much reduced. Adams and his advisors cautioned, however, that coal was a finite resource, while hydro power was renewable and sourced (via evaporation) from the sun.

Adams also made a detailed accounting of the value of the metallurgical and chemical products made possible by Niagara power. “The value of the products dependent upon Niagara power is reckoned in billions of dollars annually,” he wrote, “whereas the gross earnings of the Niagara Falls Power Company from the largest and finest hydro-electric development in the world was \$8,549,269.83 in 1926. The [company’s] tax budget for 1926 was \$1,508,794.94, thus making the Niagara Falls Power Company not only one of the real conservers of natural resources (its power houses operate at an efficiency of 90%), but a source of income to the state and a benefaction to the industries and citizenry of the nation.” 💰

Daniel C. Munson enjoys reading and writing economic and scientific history. His writings have appeared in Barron’s, Financial History and other publications.

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A DIVORCE OF BANK AND STATE

The Evolution and Role of the Independent Treasury during the 19th Century

By Ramon Vasconcellos

PRESIDENT JAMES K. POLK's first annual address to both houses of Congress on December 2, 1845 echoed public concerns regarding the appropriate role (if any) of federal and state banks concerning government deposits and left lawmakers in little doubt as to where he stood on the issue. Opining that the framers of the Constitution viewed the US Treasury, not federal or state banks, as stewards of public funds, he commented, "that when banking corporations have been the keepers of the public money...the Government can have no guaranty that it can command the use of its own money for public purposes." In hopes of deterring banks in the future from acting as fiscal surrogates of government deposits, and potentially placing funds at risk, he proposed a "constitutional treasury be created for the safe-keeping of the public money."

(Left) Portrait of President John Tyler, (Center) Daguerreotype portrait of President James Polk and (Right) Painting by N.C. Wyeth of Salmon P. Chase conferring with Abraham Lincoln about the National Bank Act of 1863.

The first attempt to devise what became known as the Independent Treasury System (or Sub-Treasury) commenced when President Martin Van Buren proposed the idea in 1837. In its application (as prescribed by Van Buren and proponents), the Treasury would collect, hold and distribute all federal revenues. State banks which, prior to the decree, had increased the circulation of money and, allegedly, contributed to the Panic of 1837, were disallowed from holding federal funds. Sub-Treasuries would serve as deposit institutions of the government under the supervision of the Treasury and could hold public monies. The Subs acted as units of the Treasury like that of a "branch" of a bank, only not privately owned. Supporters called this idea a "divorce of bank and state" and, although it became law in June of 1840, the Independent Treasury System was repealed in 1841. Van Buren's inability to gain a second term—and lack of congressional support—doomed the institution as a going concern, albeit temporarily.

Though defunct by the end of his term in office, President Van Buren believed a stronger Treasury system, free of state bank involvement, contributed to a sound economy. Congress acted.

However, divisions among members of "The Democracy" (the Democratic Party's title at the time) between conservatives who desired that state banks maintain control of deposits and reformers who supported the legislation, slowed progress. Quite vociferous in their support, the reform element of "The Democracy," also known as the "Loco Focos," advocated ceasing the ability of state banks to extend credit and the absence of paper money altogether. Their curious moniker derived from the fact that their views on banking were deemed "radical."¹

The Whig party—those in opposition to the Democrats in Congress—was of no help, since their leadership wanted to re-establish the Bank of the United States. Nevertheless, the bill for the Independent Treasury passed both houses in June 1840, with Van Buren signing the act into law that July 4. A New York Democratic member of Congress called its passage "the second Declaration of Independence." New York City revelers (perhaps his constituents) fired a 61-gun salute, one for each year since the Republic's inception. The volleys, according to those in attendance, marked freedom from the "money power." Until its repeal in June

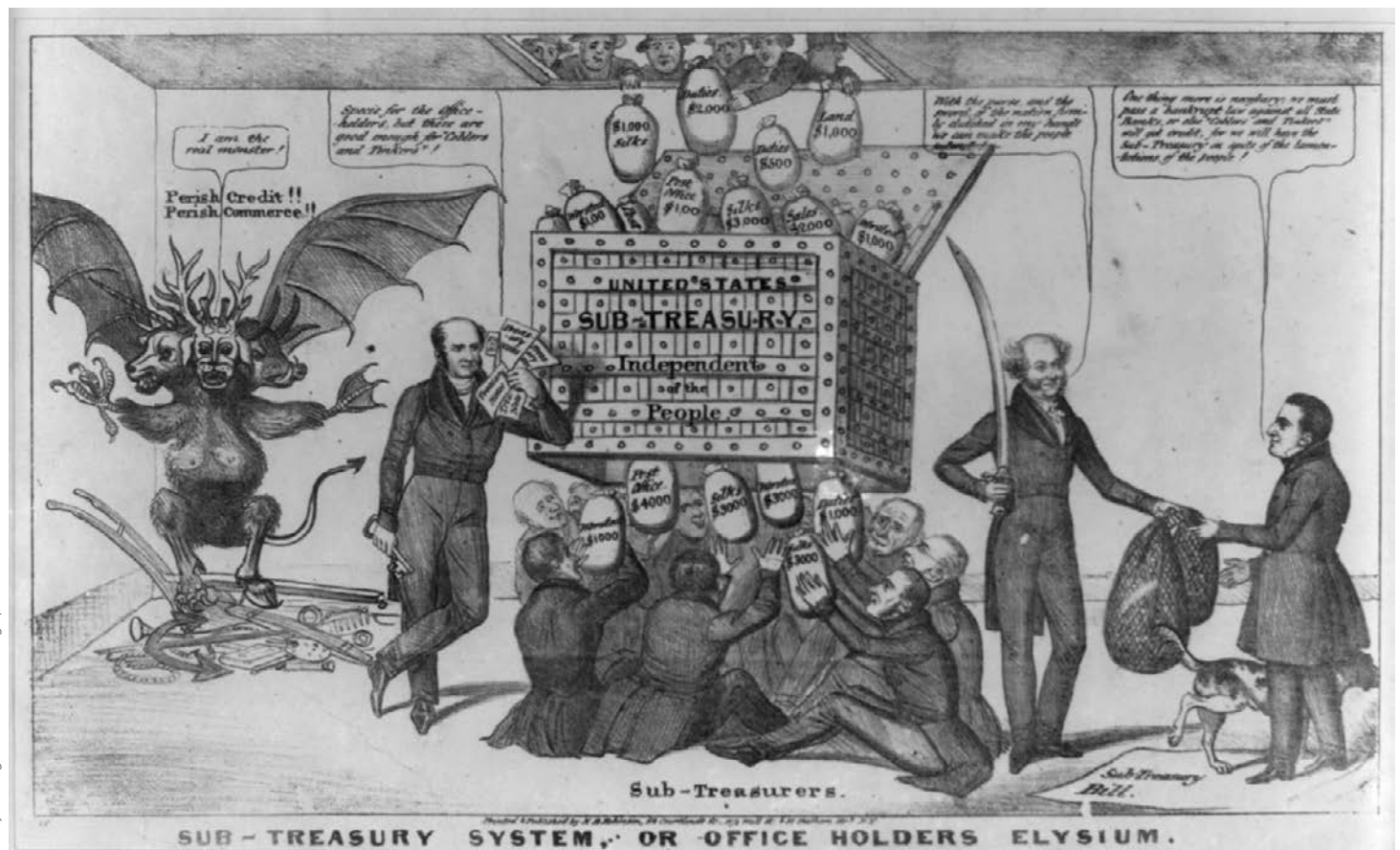
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However, President John Tyler—Harrison's successor following his death one month into his term—vetoed the legislation, after initially supporting a compromised version of the bank plan. Though he supported repeal of the Independent

Not surprisingly, the Whigs timidly supported the measure, leaving the proposal in limbo before the committee. The idea pleased neither bank advocates nor those who had supported the Sub-Treasury; Congress ended the debate in

The back-and-forth, off-and-on political squabbling over the Independent Treasury (and similar institutions) ceased under President James Polk. Similar to Tyler, he served a single term, but in contrast, he attained international and domestic legislative successes. Around the time his administration adopted tariff reform (The Walker Tariff), Polk signed into law a Sub-Treasury bill reestablishing the department whose operations and policies functioned like its short-lived predecessor. Like previous stipulations adopted under the first Sub-Treasury, debts owed to the government would be paid in coin and/or Treasury notes, with Sub-Treasuries located in cities where large concentrations of trade existed and private banks could not hold government deposits.

Secretary of the Treasury Robert Walker praised the institution's handling of the nation's fiscal affairs during the Mexican-American War. Observing how the Sub-Treasury had "been tried during a period of



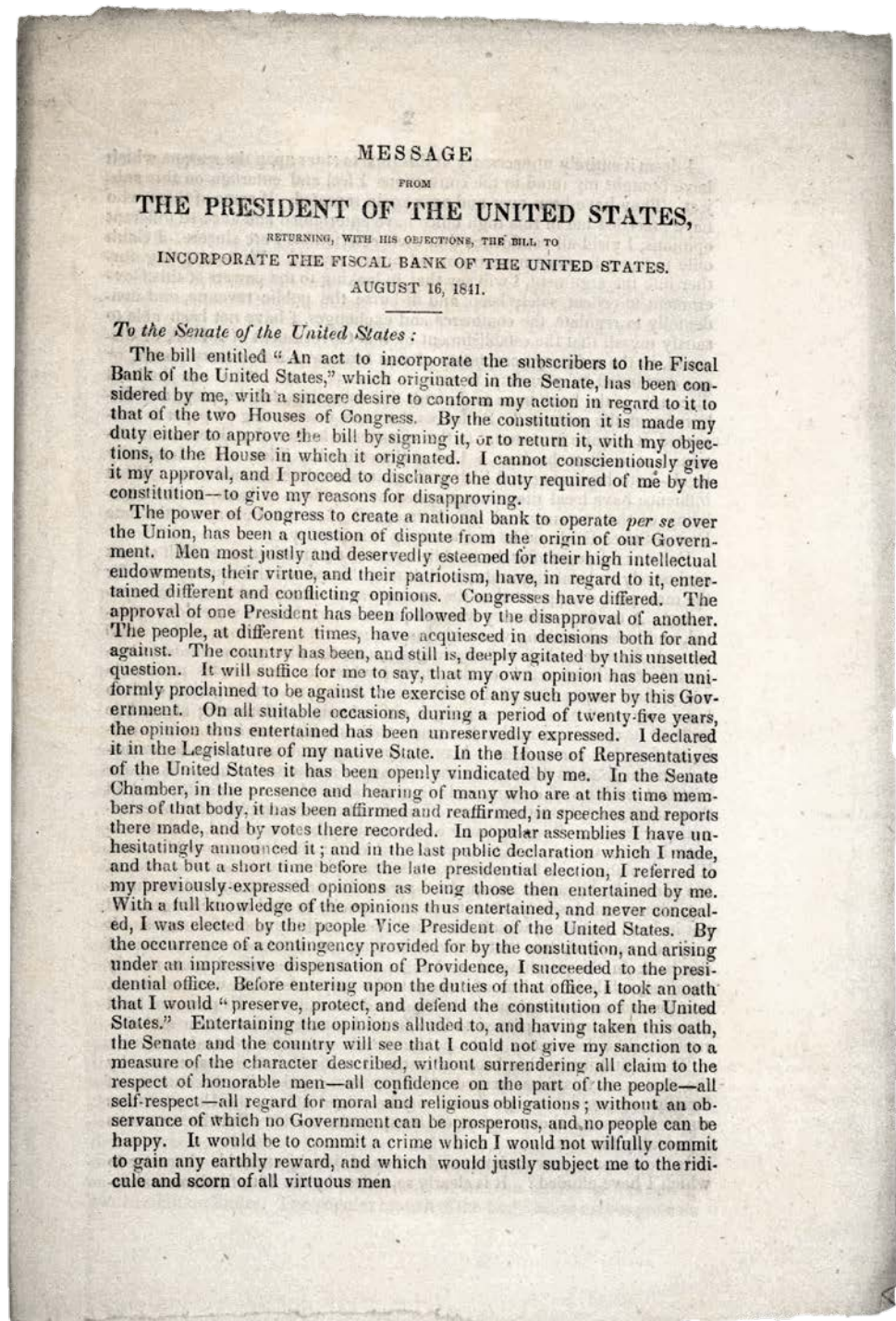
Cartoon titled "Sub-Treasury System, Or Office Holders Elysium," by Henry R. Robinson, 1838.

war” in successfully paying all domestic and military obligations, he further recognized the Sub-Treasury’s knack for managing the inflow of hard currency. Noting that \$24 million in coin had been received by the Sub-Treasury (substantially more than had ever been deposited), Walker commented that “instead of being converted into bank issues, [it] has been made to circulate directly.” To the Secretary this served, “to a great extent, as a currency among the people.” The implication was that if banks had continued serving as government depositors, they would have distributed substantial amounts of paper currency that could have, most assuredly, led to inflation.

Economic studies have shown that the Mexican-American War proved a boon to US trade, adding to government coffers despite the presence of a Sub-Treasury. However, some financial historians deem the Treasury’s role indispensable. Chroniclers have noted that it contributed to no disruptions in the money market during the conflict with Mexico, while floating three major loans to finance the war.

For example, David Kinley opined in his 1910 publication, *The Independent Treasury of the United States*, that “the Government had a beneficial influence on the currency by restraining bank issues.” He maintained that had federal monies been deposited in banks they would have, “made it the basis of further issues of notes, forcing up prices and leading to an export of specie.” Kinley displayed consensus with Secretary Walker’s observation made some decades prior.

As a precursor to the Federal Reserve, the Independent Treasury, through its ability to issue and limit the circulation of Treasury “notes,” functioned as a central bank. Critics of the Treasury’s note usage opined that the Secretary of the Treasury would, as put by New York Whig Congressman W.S. Miller, “hold in his hands the destinies of the trading community.” He also chastised proponents of the Sub-Treasury who pretended to adopt the idea of a metallic currency backed “...the actual issue of mere government paper.” Yet political and economic conditions would compromise the effectiveness of the Sub-Treasury System, allowing it to sometimes constrict bank lending activity when it needed to expand. Furthermore, the exigencies of the Civil War requiring substantial tax revenues and the ability to borrow from private banks challenged



Message from President John Tyler titled, “Objections to the Bill to Incorporate the Fiscal Bank of the United States,” 1841.

the idea of a “divorce” between state and federal depositories.

A tax proposal by Congress in 1861 to raise \$20 million also suggested the Treasury should deposit funds in private banks, presumably to deter the liquidity shortages banks could experience. However, Secretary of the Treasury Salmon P. Chase ignored their demand and continued the practice of the Sub-Treasuries collecting

and paying specie. Nevertheless, when the Secretary requested that banks *loan* the Treasury \$150 million to cover its operations, bankers stipulated (for solvency purposes) to hold government funds in their vaults. Furthermore, they requested as a condition for the loan that the Treasury cease issuing government notes redeemable at their banks. In essence, this would drain their reserves (coin).

Chase's refusal to compromise forced the banks into funding the loan; military setbacks exacerbated the problem, since the Treasury had little money to repay the banks. With the government continuing to issue Treasury notes to finance the war and the public using the notes for legal tender, lending suffered. The public hoarded gold; consequently, banks had fewer specie deposits for lending and could not count on the Treasury for repayment. The shortfall in loan volume and dearth of bank capital brought on by the Treasury's insistence on the usage of hard currency highlighted a material flaw of the Sub-Treasury system. However, the Secretary's proposal for a national banking system would, though indirectly, further erode this "divorce" between state banks and the feds.

The National Bank Act of 1863—proposed by Secretary Chase in late 1862—created the first national bank regulator (Comptroller of the Currency) and a nationwide currency (national bank note), while permitting nationally chartered banks to serve as depositories for government funds other than customs dues. By allowing banks to hold federal deposits, the act recognized the efficacy of having the Treasury play a more active role in the economy.

Subsequent to this policy modification, the Treasury had even greater influence over the economy throughout the late 19th century. With the passage of the Bland-Allison Act of 1878, it began purchasing \$2 to \$4 million of silver per month as a means of stimulating the money supply.

At times, the outflow of gold—with increased imports—witnessed the Treasury holding more silver, yet it remained steadfast by ensuring the public that banks would accept silver for deposit. Committed to the gold standard but recognizing the popularity of silver, the Treasury soon permitted the circulation of silver currency or "silver certificates." To further reassure the public, the Treasury under the Sherman Silver Purchase Act of 1890 increased the amount of Treasury purchases to \$4.5 million per month. From this act a new currency, the "Treasury note," redeemable in either gold or silver, now circulated as a medium of exchange.

Under succeeding Treasury Secretaries, the Sub-Treasury would only strengthen its role as central banker during times of financial instability. Secretary Leslie Shaw,

whose tenure spanned from 1902–1907, increased the deposits held at banks to a record \$150,216,599. Additionally, he expanded the number of depository institutions to 577, over 100 more than had ever been recognized up to that time. As a means of placating money markets (those markets existent for short-term funding), Shaw ruled that funds might be transferred from the Treasury to depository banks and back again at the discretion of the Secretary. Shaw further allowed banks to pledge municipal and railroad debt as reserves.

Still, no matter how innovative or prompt in responding to the financial calamity at hand, inevitably the Sub-Treasury would encounter drains upon its deposits. Furthermore, by insisting on banks holding reserves at the various Sub-Treasuries, banks could not lend; when these reserves were released, banks often had excess funds for loans. Either way, the money supply either contracted or expanded during the most inopportune periods.

During the Panic of 1907, then Secretary George B. Cortelyou injected substantial deposits into nationally chartered banks. Nonetheless, by that fall, the Treasury held only \$5 million to meet day-to-day operations, disabling its ability to alleviate the panic any further. After the panic abated, progressive reformers would target the money interests of Wall Street, and those government institutions deemed ill-prepared to assuage any future market disruptions. Consequently, the Sub-Treasury's multivariate functions of regulating banks, controlling the money supply and holding reserves would soon end.

By 1908, the Aldrich-Vreeland Act created the National Monetary Commission, which recommended the creation of a central bank, an institution that could respond to the currency needs of the banking system and help alleviate future panics. It would serve as a lender of "last resort" free to constrict and expand the money supply when necessary, and not one given to the manipulation of bank reserves. When established in 1913, the Federal Reserve Bank rendered the Sub-Treasuries defunct with their deposits transferred to Federal Reserve district banks by 1921.

A new era of cooperation would exist among the federal government, nationally chartered banks and those members of the

Federal Reserve System. Though the Fed has an imperfect history in responding to inflationary spirals, overall it has contributed to public confidence in the banking system and trust among the banks in its capabilities. Such fiduciary responsibilities render the 19th century notion of "divorce" between government and financial institutions both impracticable and unrealistic. \$

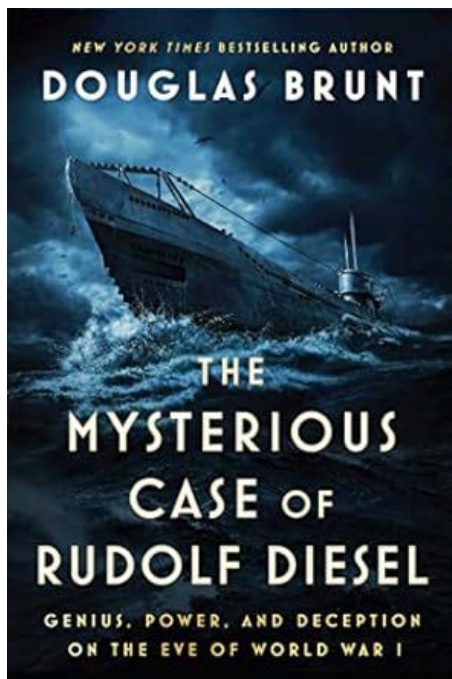
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Note

1. On one occasion, in New York City, gas lights were extinguished by conservative Democrats when they were about to speak. Consequently, they used primitive matches called "Lucifers" or "Loco Focos" to light candles and illuminate the meeting hall. As a result, for the remainder of the 1830s, the term applied to that element of the Democratic party critical of bankers and corporatism.

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The Mysterious Case of Rudolf Diesel

By Douglas Brunt

Atria Books

374 pages with photos, appendix, notes and index

\$28.99

IN THE MORE THAN 20 BOOK REVIEWS I've written for *Financial History*, this is a first: I am writing about a book that has been optioned for a movie! It's not about early colonial currency or the medieval banking system. It's a square-on mystery story—a tale of a pre-WWI engineer, Rudolf Diesel, whose invention changed industry and transportation. A man whose opinions were discussed worldwide, and who rubbed elbows with the Nobels, Edison, Benz, August Busch and other notable figures. And then (foreboding music please), on the dark night of September 29, 1913, after booking passage on a North Sea ship from Europe to England, this famous man disappeared. He was never seen or heard from again.

A slippery accident? A tragic suicide? A sinister murder? Maybe. You have to read *The Mysterious Case of Rudolf Diesel* by Douglas Brunt to begin to puzzle out how the inventor/developer of the diesel engine met his end. This is a fun, well-researched,

well-written story of an underappreciated genius whose engine still powers our world. And the cast includes Winston Churchill, the British Naval Intelligence unit, Dreadnoughts, U-Boats, John Rockefeller and (cue the villain music) Kaiser Wilhelm II.

Brunt starts the book in 1850s Europe when Diesel was born in Paris in 1858. The continent was about to undergo two far-reaching developments that are the background for the rest of the book. The first was the unification of Germany under Prussian leadership. Germany became a new entrant in a struggle among France, Britain, Austro-Hungary and Russia for power on the European continent, and in the race for overseas expansion and colonies. The second was an “explosion” of technical advancements which paced an equally astounding expansion of industrial activity and wealth. Mining, manufacturing, steel making, transportation, construction and personal consumption all saw radical and rapid change. No part of the world's economy was untouched.

The Diesels were a family of toymakers and tinkers, with clear artistic sensibilities. According to Brunt, Rudolf had a penchant for de-constructing his father's elaborate mechanical toys. The family had hard times. But through a series of breaks, by the 1870s, Diesel ended up in Augsburg, Germany, at a technical school where his instincts for engineering and machinery improvements stood out. Brunt does a good job in describing the *zeitgeist* of Germany's capital goods sector during this time—rich, competitive, willing to take risks and seeing the opportunities in growing internationally. Improvements in engineering were constantly in demand.

After receiving his first patent for bottling ice in 1881 at age 23, Diesel turned his talents to work on something that challenged every industry, everywhere. Engine efficiency. Although there were other alternatives, the world at the time relied largely on steam power. A boiler heats water and the resulting steam turns gears or blades which, in turn, create the drive for an engine. The fuel is burned separately from the engine. These can be very powerful, but they are completely inefficient, with a vast majority of the

energy from the original fuel (wood or coal) wasted by the time the engine turns.

By 1891, Diesel had his answer—oil could be pressurized and ignited within an engine, with the resultant explosion transferred directly to create power. Oil was lighter, more stable than benzene (gasoline) and required no men shoveling coal into a furnace. In addition, Diesel's engine could produce power immediately, without the time needed to “raise steam.” The patent for the new engine was issued in 1893. Over the next two decades, Diesel would grow rich and famous as his new engine proved its efficiency and power.

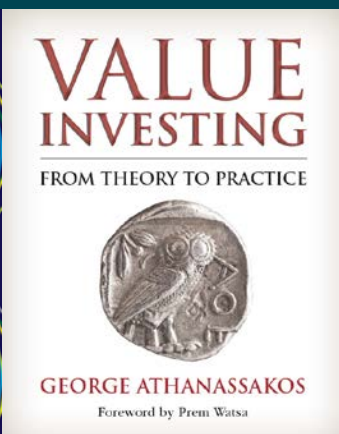
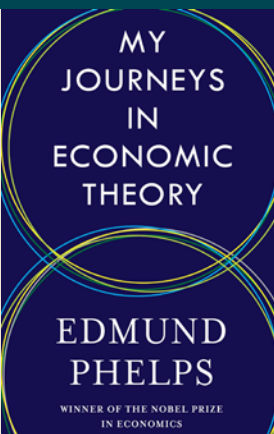
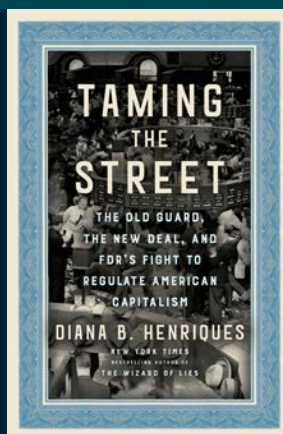
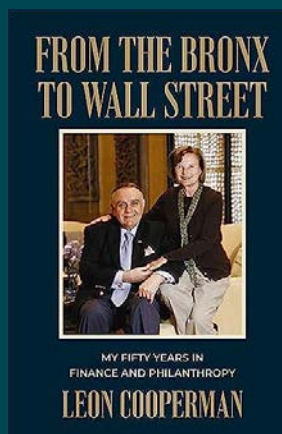
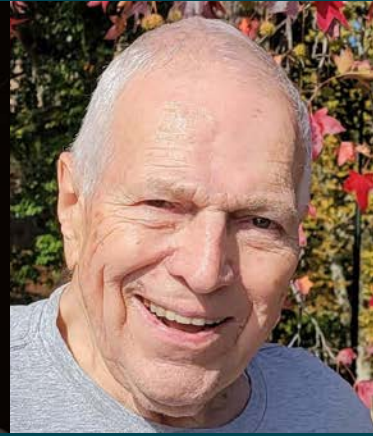
Enter Wilhelm II, the German Kaiser who had a chip on his shoulder about his British royal cousins and their world-class navy. As the 20th century opened, Wilhelm upped the ante on British naval dominance, both in surface ships and on the new undersea threat of submarines. Germany would build a navy to match that of the British Empire. The naval race was a national security issue for both countries right up to the outbreak of World War I in 1914. For the British Admiralty, led by Winston Churchill, Diesel's engine was a game changer, with a better battle profile, higher efficiencies, lower maintenance and less weight.

All this comes together on the evening of September 29, 1913, when Diesel booked passage on a passenger ship from Belgium to England. He never made it to England. His disappearance made world headlines. A body was fished out of the water in the area days later. Some items belonging to Diesel were also recovered. Strangely, the body was left in the water and the fishermen who found it (never identified) disappeared too.

Did Diesel slip off the deck? Did he take his own life? Did he cross the wrong people? Brunt methodically pulls together the various strands of the “cold case” and comes to his own conclusions. After 100 years, is the case solved? No plot spoilers here. Read the book and make your judgement. \$

James P. Prout is a lawyer with more than 30 years of capital market experience. He now is a consultant to some of the world's biggest public companies. He can be reached at jpprout@gmail.com

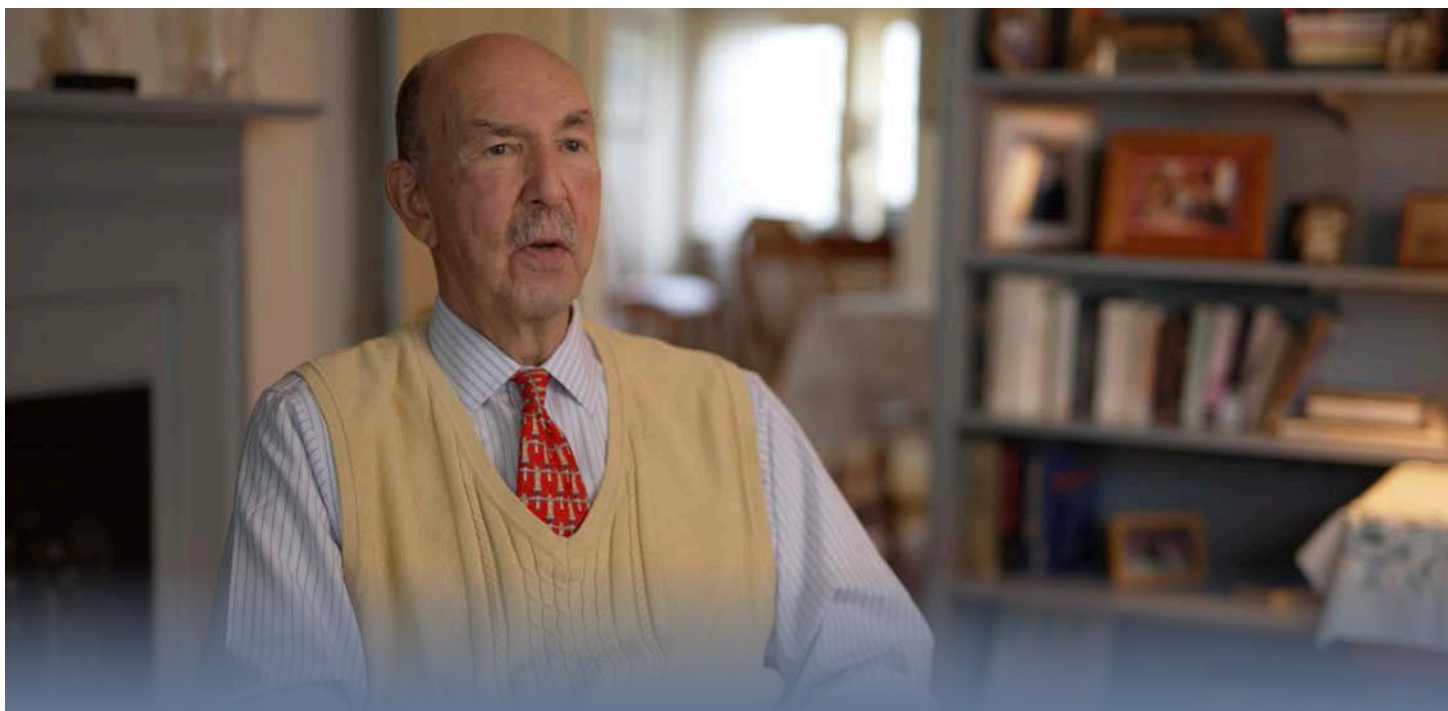
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